Chemical

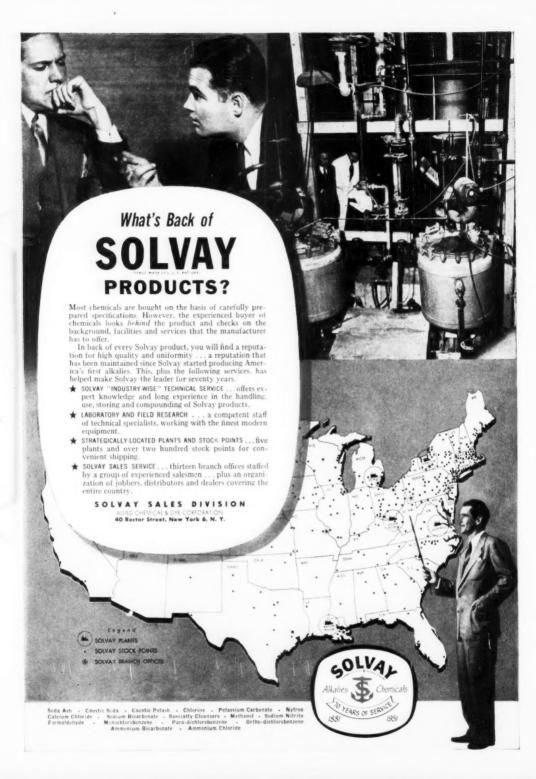
September 15, 1951

--Week-





Ethanol-in-storage hits five year high; big question: will rubber sop it up p. 13
New analysis answers old
poser: Are big companies more
efficient?p. 16
CW Camera tours polyphosphate
lab; sees new builder evolved,
launched p. 24
It's simple but profitable; job
study cuts costs on drum
handling p. 31
Formula shifts feature dog-care
proprietaries; now \$6 million
business p. 37



Chemical Week

Volume 69 Number 11 September 15, 1951

OPINION	2
NEWSLETTER	7
BUSINESS & INDUSTRY	13
RESEARCH	24
PRODUCTION	31
SPECIALTIES	37
BOOKS	46
MEETINGS	46
MARKETS	49
BOOKLETS	56

PUBLISHER Wallace F. Traendly
EDITORIAL DIRECTOR S. D. Kirkpatrick
EDITOR W. Alec Jordan
EXECUTIVE EDITOR Richard L. Demmerle
MANAGING EDITOR Howard C. E. Johnson
ASSOCIATE EDITORS: John J. Craig, Herman
W. Zabel. ASSISTANT EDITORS: Donald P.
Burke, Joseph Gordon, Ralph R. Schulz.
REGIONAL EDITORS: Frank C. Byrnes, Chieago; John Kent, Washington; James A.
Lee, Houston; Elliot Schrier, San Francisco. Arr Editors: Woodfin G. Mizell. Jr.
EDITORIAL ASSISTANTS: Claire Baker, Dennis J. Lynds, Leona Mahler, William Oleott.
DOMESTIC AND FOREIC SERVICE: McGraw-Hill News Bureaus in principal cities of the
U. S. and throughout the world.

CONSULTING EDITORS: Lawrence W. Bass, Benjamin T. Brooks, John V. N. Dorr, Charles R. Downs, Ernest W. Reid, Norman A. Shepard, Roland P. Soule, Robert L. Taylor.

Business Staff & Regional Offices: See page facing back cover.



Chemical Week (including Chemical Specialties, and Chemical Industries) is published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), Founder. Publication Office: 1309 Noble St., Philodelphia 23, Pa.

Proble 5t., Philodelphia 23, Po.
Executive, Editorial and Advertising Offices:
McGrow-Hill Building, 330 W. 42nd St., New York
18, N. Y. Curtis W. McGraw, President; Willard
Chavalier, Executive Vice-President; Joseph A. Gerar41, Vice-President and Treasurer; John J. Cooke,
Secretary; Paul Montgomery, Senior Vice-President,
Publications Division; Ralph B. Smith, Editorial Director; Nelson Bond, Vice-President and Director al
Advertising; J. E. Blackburn, Jr., Vice-President and
Director of Circulation.

Director of Circulation.

Subscriptions to Chemical Week are solicited in the chemical and process industries only from management men responsible for corporate affairs, parchasing, soles, marketing, packaging, research resistance and company content of the content of th

eays for change of addres. I.

Single copies 356. Subscription rates—United States and Possessions \$5.00 a year; \$8.00 for two years; \$10.00 for two rears; \$10.00 for two years; \$10.00 for two years; \$12.00 for two years; \$2.00 for two years; \$2.00 for two years; \$2.00 for two years; \$3.00 a year; \$2.00 for two years; \$3.00 for three years. All other countries \$25.00 a year; \$3.00 for three years. Entered \$4.00 for two years; \$5.00 for three years. Entered \$4.00 for two years; \$5.00 for three years. Entered \$4.00 for thre



Furafil is inexpensive and is shipped throughout the year from two plants, eliminating the need for users to carry a large inventory for periods of seasonal shortages. The following list of typical physical and chemical properties will give you a better idea of its characteristics:

Color	Dark brown
Bulk density	30-35 lbs./eubic ft.
pH (water extract)	2-3
Cellulose (Bray method using 72%	
H ₂ SO ₄)	38%
Residue from saccharification (lignin	
& resin)	42 %
Ash	3-5%
Carbon (ultimate analysis)	50-53%

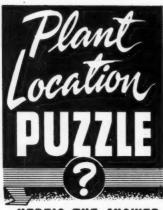
If you need an anti-caking agent, an economical powdered reducing agent, a source of fixed carbon, a burn-out material, or a dependable filler, Furafil will be of interest to you. The above properties will also suggest other applications to you. We welcome your inquiries and will be happy to work with you in any new ideas you may have.

A finely ground grade known as Furafil 100 is also commercially available. It is ground so that 99% will pass a 100 mesh screen. This material has been successfully used as an extender for phenolic glues and as a filler for specially molding powders.

The best way to evaluate Furafil in a given application is by actual test. A request on your business letterhead will bring you a sample and a copy of our technical bulletin. Write today.

Reg. U. S. Pat. off.





HERE'S THE ANSWER

IN ONE SPOT GRDA OFFERS:

As low as 5.3 mills per kwh for industrial use. System capacity 135,000 kw.

PROCESS STEAM

At 20 cents per thousand pounds.

At 5 cents per thousand gallons for treated water, 4 cents per thousand for raw water. Pumping capacity 100,000,000 gallons daily.

Tracts up to 50 acres available at the original low cost of a war surplus transaction.

SECURITY In the center of the nation, in line with the general movement of industry inland.

Skilled and unskilled men and women ready and eager to work, free of "isms"—the best type of American citizens.

Write Drawer 1126 for this brochure

and many other favorable industrial factors.

GRAND RIVER DAM AUTHORITY

VINITA, OKLAHOMA

An Agency of the State of Oklahoma

OPINION

Giant Bottle

To The Editor: Perhaps you've seen the enclosed clipping . . . perhaps you haven't. (Maybe, as you might say, one of your "scurrying correspondents" has already sent it in.)

. . . I thought you'd be interested in reading this point of view on the fluoridation of water. It doesn't, incidentally, agree with mine . . . and I suspect that it doesn't agree with yours. . . .

ADAM R. SEARS, Boulder, Col.

Thanks, Reader Sears (who out-ran our correspondent) for an intriguing contribution. The enclosure: An "open letter" written to the Surgeon-General, Public Health Service by H. B. Anderson, Secretary, Citizens Medical Reference Bureau, Inc. Here it is:

"We respectfully protest against the campaign being carried on by your Service for the fluoridation of the nation's water supply on the ground that it constitutes compulsory medication of the entire population . . . is highly objectionable to large numbers of persons.

"We maintain that under the Pure Food and Drug Act it is intended that the water supply shall be made safe for human consumption but it was never intended that it should be adulterated with deadly chemicals or poisons for the alleged cure or prevention of disease . . . thereby become a giant medicine bottle containing the same prescription for every man, woman and child in the nation.

"We commend the action of the California Legislature in limiting the application of fluoridation to bottle water only.

"... numerous references can be found by you in medical literature where no relationship could be established between the fluoride content of the water and the presence or absence of tooth decay... we maintain that if such findings were given the same publicity as is now given to the experiments where the addition of fluoride seemed beneficial the experimental character of fluoridation would be more clearly understood.

"It is recognized that under the fluoridation program the sodium fluoride is diluted to such an extent that its possible harmful effects may be difficult to detect. On the other hand, the accumulative after-effects may prove as harmful as certain stimulants which are so widely advertised.

"No claim is made that fluoridation is of any benefit to older children and adults or when used for industrial purposes. Whether it does or does not prevent tooth decay in children under eight years of age is controversial. The only ones definitely known to benefit thereby are chemical companies and equipment firms.

"An article in 'Chemical Week' (July 7, 1951) refers to 'Water Boom for Fluorides' and says, 'Only 1% of the nation's water is now treated: thus the market potential has fluoride chemical makers goggle-eyed.' It states, 'But any apathy or opposition on the part of the public is made up for by the USPHS's zeal in drumming up the program. It is asking for Federal money to develop interest, and there is talk of seeking Federal subsidization of water treatment.'

"Also it states that 'Standing to benefit from the boom are chemical companies and equipment firms,' and in its closing sentence it says, 'It adds up to a nice piece of business on all sides, and many firms are cheering the USPHS and similar groups on as they plump for increasing adoption of fluoridation.'"

Out-of-context quotes can mislead. Another CW comment neatly overlooked by the Reference Bureau: "Even if all the water in the country were fluoridated it wouldn't add up to a bonanza for fluoride makers . . . 45,000 tons of sodium fluoride or 35,000 tons of silicofluoride would do the job. . . . It would mean even less to equipment makers, for if ten year amortization of equipment is assumed, it would cost less than chemicals."— ED.

Sulfamate Warning

To the Editor. A recent explosion at Du Pont's Linden, N. J., plant demonstrated that, under very special conditions, a concentrated aqueous solution of ammonium sulfamate—widely used as a weed killer and flame-retarding agent—when heated to certain temperatures can undergo spontaneous hydrolysis thereafter with the liberation of sufficient heat, under adiabatic conditions, to cause the solution to boil.

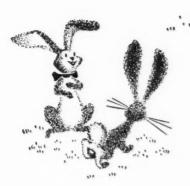
In a closed container, or one with only a small opening, sufficient steam pressure may thus be generated to cause a typical "steam boiler" explosion. The explosion at the Linden plant resulted from such spontaneous hydrolysis of a concentrated and acidified ammonium sulfamate solution which was steam heated in a large storage tank having only a small vent.

You've asked for more...

so Brown Company is

DOUBLING
ITS
PRODUCTION
OF
SOLKA®-FLOC





Uses for SOLKA-FLOC include plastics, rubber and adhesives. It also has wide application in filtration, for flocking, and as a chemical raw material. So many new applications have been found for SOLKA-FLOC that demand for it has far exceeded the supply. This is why Brown Company is installing a new plant which will double its SOLKA-FLOC production. The plant will be in operation November 1, 1951.

Avail yourself of this increased supply of SOLKA-FLOC. Let our Technical Service Staff work with you in finding out how you can use SOLKA-FLOC advantageously in your products. Write to Dept. CW-9, Brown Company, 150 Causeway St., Boston 14, Mass.



Berlin, NEW HAMPSHIRE

GENERAL SALES OFFICES: 150 CAUSEWAY STREET, BOSTON 14, MASS.

Branch Sales Offices: Portland, Me., New York, Chicago, St. Louis, San Francisco, Montreal

SOLKA & CELLATE PULPS • SOLKA-FLOC • NIBROC PAPERS • NIBROC TOWELS • NIBROC KOWTOWLS • BERMICO SEWER PIPE, CONDUIT & CORES • ONCO INSOLES • CHEMICALS



Soon Available

INDOPOL H-100 and H-300

POLYBUTENES

Highly viscous, non-drying, light colored synthetic hydrocarbons

FOR

- Adhesives
- Sealing and calking compounds
- Electrical insulating products
- Paper products
- Surgical and industrial tapes

	Indopol H-100	Indopol H-300
Viscosity 210° F., Saybolt sec	1040	3000
Specific gravity 60°/60° F	.881	.894
Color, NPA	1	11/2
Pour Point (ASTM) °F	20	35

Additional lower viscosity grades are available.

INDOIL®
CHEMICAL PRODUCTS

INDOIL CHEMICAL COMPANY

910 South Michigan Avenue

Chicago 80, Illinois

OPINION. . .

Fortunately, no one was injured, although the property damage was considerable.

The fact that this hazard has not been generally recognized suggests the desirability of giving wide publicity in the scientific and technical literature to the possibility of an explosion due to the above-mentioned cause.

Experiments have indicated, for example, that a 60% aqueous solution of ammonium sulfamate at a pH of 5 must be heated to approximately 200°C. to initiate the runaway reaction, whereas at pH 2, only 130°C. is required.

Solutions of ammonium sulfamate weed killer and flame retardant formulations will not have pH values below about 4.5 at concentrations of 60% or greater unless acid is added, and if solutions are stored in open containers the temperature will not rise above the boiling point, which for a 60% solution would be approximately 107 °C.

Under ordinary conditions of use involving more dilute solutions, there appears to be no danger of rapid hydrolysis.

Sulfamic acid, a companion product of ammonium sulfamate, is much less prone to produce an explosive reaction through hydrolysis. We have been unable to produce a runaway hydrolysis of sulfamic acid at atmospheric pressure.

Jas. K. Hunt Technical Adviser Public Relations Dept. E. I. du Pont de Nemours & Co., Inc. Wilmington, Del.

Millions, not Thousands

To The Editor: I have just read your issue (August 11) which included a story on Phillips Chemical Co. activities. The story was well done . . .

However, I would like to make a correction concerning our Philback production. The 1950 output should have been 180 million pounds instead of 180,000 lbs. . . . the estimated production in 1952 is 290 million instead of 290 thousand.

Fred J. Pralle Phillips Petroleum Co. Bartlesville, Okla.

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: The Editor, Chemical Week, 330 W. 42nd St., New York 18, N. Y.

chlorinated solvents?

Want a solvent for degreasing or carbon removal . . . for paints or plastics . . . a resin solvent or a selective extractant? Listed below, you'll find a Wyandotte Chlorinated Solvent suitable for your purpose. We make ethylene dichloride, propylene dichloride and other solvents. These products are currently in short supply, but we'll be glad to help you develop applications for the time when they're available. See our specifications in the Chemical Materials Catalog. For further information, write us.

	Appearance, liquid	Boiling Range (5-95%)	Flash Point (apen cup)	Specific Gravity 25°C./25°C.
Ethylene dichloride	clear	83°-84.5°C.	70 F.	1.25-1.26
Propylene dichloride	clear	95°-97°C.	70°F.	1.16-1.17
Solvent C100	clear	90 -120 C.	70°F.	1.15-1.17
Solvent C160	pale yellow	120 -170 C.	95 F.	1.08-1.12
Betachlor	pale yellow	170°-180°F.	185°F.	1.18-1.19
Solvent R	dark brown	180°-200°F.	200 F.	1.15-1.19
Solvent CL-2	amber	80°-200°C.	80°-95°F.	1.15-1.19

SODA ASH . CAUSTIC SODA . BICARBONATE OF SODA CALCIUM CARBONATE . CALCIUM CHLORIDE . CHLORINE HYDROGEN . DRY ICE . SYNTHETIC DETERGENTS . GLYCOLS CARBOSE (Sodium CMC) . ETHYLENE DICHLORIDE . PROPYLENE DICHLORIDE . AROMATIC SULFONIC ACID DERIVATIVES OTHER ORGANIC AND INORGANIC CHEMICALS

WYANDOTTE CHEMICALS CORPORATION Wyandotte, Michigan . Offices in Principal Cities



METHYL DICHLOROACETATE has now a limited use as an organic intermediate. The reactions listed below or merely its formula may suggest new possibilities to the inquiring mind. The two chlorine atoms are easily replaced by a variety of organic groups, thus indicating a large number of possible derivatives. This ester has already been suggested specifically in several organic and pharmaceutical syntheses.

Cl2CH COOCH3

KAY-FRIES ...

methyl dichloroacetate

KAY-FRIES SPECIFICATIONS . . .

 purity
 •99.0% minimum

 acidity
 •.30% maximum

 specific gravity
 •1.3759-1.3839 at 20°/20°C

 refractive index
 •1.4374-1.4474 at 20°/D

• Typical reactions of METHYL DICHLOROACETATE

(C2H4O)2CHCOOCH3 + 2NaCl Cl2CHCOOCH8 + 2NaOC2H5 sodium ethylate methyl diethoxyacetate catalyst Cl2C(CCl2COOCH3)COOCH3 + H2 2Cl2CHCOOCH3 methyl tetrachlorsuccinate Mg amalgam Cl2CHCOOCH3 + CoHoCHO C6H6CH2COCOOCH8 + Cl2 benzaldehyde methyl phenylpyruvate catalyst Cl2CHCOOCH3 $+ RCH = CH_2$ RCH2CH2CCl2COOCH3 methyl α-dichloro-γ-subst. butyrate subst. ethylene Na Cl2CHCOOCH3 + 2CH₂(COOCH₃)₂ CH₃OOCCH|CH(CO₂CH₃)₂]₂ + 2HCl dimethyl malonate α-di-γ-di-β-mono carbomethoxy propane

For availability and technical information please write or phone.

American-British Chemical Supplies, Inc.

Selling Agents For



Plant-West Haverstraw, N. Y.

KAY-FRIES CHEMICALS, inc.

180 Madison Ave., New York 16, N. Y.

MUrray Hill 6-0661

NEWSLETTER

The "freeze" on issuing certificates of necessity is due to thaw soon. But it won't mean as much to the chemical industry as you might expect.

This is what's happening, what's ahead: Government officials are getting a little leary of chemical company applications, feel that most chemical plants now planned (1) would ordinarily be part of a "normal" expansion; (2) would be just as useful in times of peace as in the current emergency.

Apart from that, many chemical managements are beginning to question the advisability of applying for fast amortization privileges. Reason: Rapid write-off is fine IF taxes are to be lowered at the end of five years. That way companies benefit, take the fast amortization in a high tax period. But, if taxes are going to continue to climb—and it takes a real gambler to bet they won't—smaller write-offs over a bigger chunk of the future are better.

The scramble for certificates will slow down, and this is how they'll be doled out: Chemical projects will rate third place, below so-called "deadline" projects and direct military end-item plants.

Already some chemical products are running into heavy seas. It hasn't been said, but there have been strong hints by Charles Wilson, that no more tax amortization relief will be issued for nearly a year for synthetic fiber plants.

But tax considerations and Washington OK's aren't the whole story. A lot hinges on the metals outlook. Structural steel, which will be tight for 9-12 months, is one crimper; copper is another.

The copper strike has made plenty of big, blaring headlines. And it's highlighted just how short we are of that essential-to-chemicals-and-equipment metal. But the work stoppage is only an incident—the problem is much deeper than that.

This week, NPA, a little gingerly but still plainly, pointed the finger at OPS, blamed that agency for our copper plight.

The nub: Foreign prices (27½¢ or more) are higher than the 24½¢ U. S. ceiling. (The "or more" ranges up to 50¢). Natural result: copper is diverted to higher-paying countries.

Nor can you expect the situation to be better soon. Imports (641,000 tons/1950) are plummeting, will end up the year dismally below 1950. Our price policy is one reason; another is that Norway and Japan won't be sending us tonnages of copper this year as they did last. (They don't normally export copper to the U. S., just happened to have heavy inventories, sold to us when the price was "right.")

As yet, though, we haven't dug deep into our national stockpile. "Up to 25,000 tons" has been authorized for release to industry; transfer of only about half has actually taken place.

The shortage of metals may slow or hamper chemical expansions, but don't think that it will throttle the industry's growth. There's solid evidence to the contrary, and plenty of it this week.

Big news is brewing in Texas. Alamo Chemical Co., organized as a tri-owned venture by General Aniline, Borden and Phillips Chemical, has retained an engineering firm, is quietly sizing up the potential for a multimillion dollar ammonia, methanol, acetylene plant to be located on the Ship Channel (near Phillips Chemical). One estimate of plant size: \$38 million, 400 tons/day ammonia.

As yet the go-ahead decision hasn't been made, but here's one that has: Gulf Oil, which is busy building an ethylene line from Port Arthur to the Ship Channel (to serve Ethyl and Shell), will push it on to Texas City where hefty ethylene users Monsanto and Carbide are located.

New plants, big construction projects aren't the only news: new products, new processes are boiling along. Here are several upcoming newsmakers you'll hear more about soon.

A major producer of ammonium sulfate is carefully considering switching over to the German process (ammonia reacted with calcium carbonate, the resulting ammonium carbonate treated with a calcium sulfate slurry—obtainable as a superphosphate byproduct). Reason: to skirt the sulfuric acid shortage.

Saccharin from phthalic anhydride instead of toluene is also on the horizon. Maumee Development Co., Toledo, has developed a novel process for saccharin manufacture, claims that its phthalic-based product is devoid of after-taste.

And another non-ionic detergent is being added to the Hercules Powder line. It's an ethylene oxide adduct to hydroabietyl alcohol.

The government wax polish plant (CW, Sept. 11) which has specialties manufacturers hot under the collar is strictly experimental, so says the General Services Administration. GSA reiterates that it is being used only to improve its specification for floor wax, will be dismantled after serving this purpose.

The Chemical Specialties Manufacturers Association has offered industry's help in developing such specs, for in the eyes of many polish makers a 30,000 gal-a-year output is hardly "experimental", savors more of a good piece of business.

Colgate has settled the strike sparked by the walkout of salesmen in the New York area (CW, Sept. 8). The issue: union or open shop for salesmen. The company won on the open shop clause, granted pay increases, some job seniority benefits.

Turning-clouds-inside-out: the drowsiness-causing property of some antihistamines is a drawback now being put to use—in Dormin, Dormin Inc.'s new non-narcotic sleeping pill. Active ingredient: methapyrilene hydrochloride.

... The Editors

what color will RED be?

Jaugatuck

ROYAL FAMILY OF PLASTICS

How Naugatuck Marvinol Laboratories can help you with color problems in VINYLS

In compounding or processing do you maintain your vinyl colors just as you want them? Do color-matched products really match? Do they remain true as long as the product lives?

These are tough problems. But the Naugatuck Chemical Laboratories may have answers to help you solve many of them.

Thousands of man-hours and dollars are devoted each year to fundamental color technology. The results of this unusual storehouse of color "know-how" are here for application to your problems.

Hundreds of charts record the effect of stabilizers and lubricants on the heat and light stability of the important colorants in vinyl compounds. Competent color technologists are ready to advise and help you.

Our Naugatuck laboratory is your laboratory with vast amounts of data on colorants, stabilizers, plasticizers, and plastic processing techniques. And our Naugatuck Marvinol resins have the stability your products need.

Yes, Naugatuck is a sound base for your plastics future—with the right combination of laboratory "know-how" plus the best resins or resin combinations for your future. Why not see how much our scientific service and our Marvinol resins can do for your products? Write us today on your company letterhead. Send inquiry to the address below.

Vaugatuck Chemical Division of UNITED STATES RUBBER COMPANY

BRANCHES: Akron • Boston • Charlotte • Chicago • Los Angeles • New York • Philadelphia • IN CANADA: Naugatuck Chemicals, Elmira, Ontario
MARVINOL® vinyl resins • KRALASTIC® styrene copolymers . • VIBRIN® polyester resins

Rubber Chemicals
Aromatics
Synthetic Rubber
Agricultural Chemicals
Reclaimed Rubber
Latices

Paint, Varnish and Lacquer Manufacturers are sold on the

PERFORMANCE RECORD PRODUCTION ECONOMY



The paint industry has found in Solvent 601, a medium evaporating solvent which gives superior performance at lowest cost.

Replacement For Methyl Ethyl Ketone

Celanese Solvent 601 is being widely used as a complete replacement for methyl ethyl ketone, ethyl acetate, isopropyl acetate and similar solvents, in the production of varnishes, lacquers and other nitro-cellulose formulations.

Solvent 601 is now available in volume quantities.

Investigate its performance possibilities. For samples, prices, additional information, write: Celanese Corporation of America, Chemical Division, Dept. 502-I, 180 Madison Ave., N. Y. 16.



ACETIC ACID . ACETALDEHYDE . FORMALDEHYDE . PARAFORMALDEHYDE . ACETONE . BUTYL ALCOHOLS . METHANOL NORMAL PROPANCL . BUTYLENE GLYCOLS . DIPROPYLENE GLYCOL . PROPYLENE GLYCOL . PROPYLENE OXIDE . TRICRESYL PHOSPHATES





In the Nation's Fight Against Insects and Weeds
Antara Surfactants are in there pitching

...and Antara Technical
Service is backing them up!



ANTARA® SURFACTANTS

Emulsifiers • Dispersants • Wetting Agents

Increase the effectiveness of insecticides and weed killers

Antora Surfactants provide the emulsifying, dispersing or wetting characteristics needed for the effective use of the full lethal properties of insecticides and weed killers. There's an Antara Surfactant for practically every insecticide and weed killing problem.

Antara Surfactants insure a homogeneous, stable concentrate with good storage and packaging properties, able to resist the effects of temperature and weather. And, what is more important, they insure insecticides and herbicides that work faster, harder and longer.

HERE ARE A FEW ANTARA SURFACTANTS:

Antaron L622 — 2,4-D amine salts are subject to precipitation in hard water, clogging spray nozzles. With Antaron L622, precipitation is prevented even on dilution with water containing as high as 1000 ppm hardness. Field tests confirm that Antaron L622 is superior to products currently offered.

Antaron N185 — the most versatile of our wetting agents for use in wettable powder formulations. Gives excellent performance with potassium

cyanate for crab grass control, with maximum effectiveness and minimum turf damage. Antaron N185 has also been used with great success in 50%, 75% and 90% DDT wettable powders.

Antorox 8201 — the best of our emulsifiers for stable dispersions or emulsions of 2,4-D esters, chlordane, toxaphene, lindane, CPR, parathion, or para-tolyl benzoate in hard or soft water. A close approach to the long-sought, all purpose emulsifier.

Antorox A400 — forms stable dispersions or emulsions with 2,4-D acid, aldrin, dieldrin, lindane and dimethyl phthalate. Also recommended for quick-breaking emulsions of 2,4-D esters, chlordane and toxaphene.

Antarox A601 — a new nonionic emulsifier. This 100%-active liquid has been approved by U. S. Public Health Service for use in 25% DDT formulations indicated for government bid work.

If you seek to make your compounds more efficient, easier to sell and possibly less costly to make — write today for your copy of the new Antara booklet AP17. Kindly address your inquiry to Department CW9.



Send for your copy of this new manual

ANTARA. PRODUCTS

DIVISION OF

GENERAL DYESTUFF CORPORATION

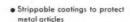
435 HUDSON STREET . NEW YORK 14. N. Y.



Boston • Providence • Philadelphia • Charlotte, N. C. • Chicago • Portland, Ore. • San Francisco
IN CANADA: Chemical Developments of Canada Limited, Leaside, Toronto 17

try BUTYL STEARATE

Many uses for this stable, high-boiling ester are based on its excellent lubricating and plasticizing properties. The few examples listed give an idea of the wide range of products which utilize the lubricating and other properties of Butyl Stearate:



- Cable, paper, and other special lacquers to prevent "blocking"
- Ceramic, molding compositions
- Plastic articles and films
- Abrasion- and water-resistant finishes

Non-staining lubricant for rolling foil

- Textile spinning and throwing oils
- Special lubricants for mechanical equipment

Butyl Stearate is an important ingredient, too, in such products as lipsticks, shaving creams, vanishing creams, mimeograph stencils, and carbon papers. Write today on your company letter-

Write today on your company letterhead for literature and a free sample.

SPECIFICATIONS

Specific Gravity @ 25°C/25°C: Acidity as Stearic acid:

Color: Water: 0.856-0.861 0.5% max. Water-white

No turbidity when one volume is mixed with 19 volumes of 60° Be' gasoline at 20°C

PROPERTIES OF COMMERCIAL-GRADE MATERIAL

Molecular Weight Density @ 20°C:

Coefficient of Cubical Expansion

Distillation Range @ 25 mm of Mercury: Melting Point:

Heat of Fusion: Refractive Index, np @ 20°C: @ 25°C:

Dielectric Constant @ 30°C: Odor: Flash Point, Cleveland Open Cup:

Solubility @ 25°C:

ADE MATERIAL 340-58 (calc.) 0.858 g/m 1, or 7.14 lbs/gal. 0.855 g/ml, or 7.13 lbs/gal. 0.000 46 per 1°F 0.000 83 per 1°C.

220°C - 225°C 19°C, approx. 40 cal g, approx. 1.444 1.442 3.12

Practically odorless 374°F Approximately 0.2 ml Butyl Stearate soluble in 100 ml water. Approximately 0.03 m. water soluble in 100 ml

Butyl Stearate

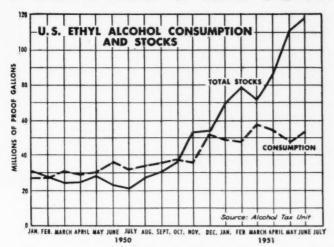
GS

INDUSTRIAL CHEMICALS DIVISION

COMMERCIAL SOLVENTS CORPORATION

17 East 42nd Street, New York 17, New York

BUSINESS & INDUSTRY



Ethanol: Too Much on Hand?

Ethanol stocks, at highest level in five years, worry producers lest the 1949 debacle be repeated.

Four new ethanol-from-ethylene plants that will soon go on stream compound this worry.

Question: Will "politics" dictate continued operation of the butadiene-from-ethanol plants? Or will a sudden decision to stop production leave the industry with 4-5 months' stocks to be worked off in a sated market?

The ethanol market is again in that not too-unusual-for-ethanol condition, precarious. Stocks held in storage are at the highest point in five years and industry experts are beginning to worry lest the situation get out of hand a la 1949 when the price plummeted from over 90¢ per gallon to 17¢ in a matter of weeks.

But this is not enough. Ethanol is also in politics. At least the decision for or against continuation of the operation of the butadiene-from-ethanol plants hinges as much on national and international politics as on technology and normally sound economic reasoning. Finally, the field of ethanol manufacture is in the throes of completing a major change in raw material base—hydration of ethylene derived by cracking petroleum hydrocarbons is rapidly replacing the not only time-honored but truly prehistoric sugar fermentation processes.

Study, however, uncovers certain factors that provide guideposts to determine the long-term trend. The short term situation had best be left in the lap of Rubber Reserve and the Munitions Board which sets production policies for that organization.

Butadiene-from-Ethanol: Rubber Reserve comes into the ethanol picture because of its large ethanol requirements for butadiene manufacture. And this huge demand, of course, is dictated by the current state of world politics.

As a result of the Korean War the price of natural rubber has soared. It has become extremely urgent for the Government to increase its stockpile of natural rubber. This, of course, has raised the demand for synthetic rubber and the butadiene from which it is made. And this, in turn, brings the problem right back to the focal point of ethanol. For, by the end of

November, the last two of seven existing butadiene-from-ethanol lines will go on stream. Object: to make possible a boost in synthetic rubber output (mostly GR-S) from a rate of 760-000 tons per year to 860,000.

How Uneconomic? GR-S rubber from alcohol costs about 32-35¢ per pound to produce while the same material from petroleum-based butadiene costs about 18-19¢. The existence of this cost differential and the aforementioned increase in ethanol-derived butadiene are the reasons which Rubber Reserve has advanced for the most recent increase in price of crude GR-S-from 24.5¢ per pound to 26¢.

Economic pressure exerted by this huge cost differential constitutes a sword of Damocles hung over the head of the ethanol industry. The thread holding the sword is the "political" decision that could at any day withdraw the largest alcohol consumer, Rubber Reserve, from the market—175 million wine gallons per year—with all the butadiene-from-alcohol lines in operation.

But there is still another technological change which should provide a sizable decrease in the amount of butadiene which will be produced from alcohol. Two major butadienefrom-butylene plants are now being converted to obtain the maximum results claimed for the new Dow catalyst (CW, June 9). If they can equal those achieved in early tests, the production capacity of these units should be upped 50% by this change. A portion of this increase, about 20%, comes from an increase in vield. The rest is provided by increased throughput. Complete conversion would go far towards ridding the ethanol market of the "political" question, for less ethanol would be needed.

Enough?: When all seven butadiene-from-ethanol lines are in operation, present stocks of ethanol (over
60 million wine gallons) will still be
at a high, but not dangerous, level.
They represent somewhat over two
months' needs. The problem will come
when the "political" atmosphere
clears to the point that serious consideration can be given to halting
the manufacture of butadiene from
ethanol. The "normal" requirements
of the ethanol industry will then be
such that these stocks will represent
4-5 months' needs. And this amount

of ethanol in storage under normal supply and demand conditions spells only one thing, a headache.

As if this were not enough trouble, production of synthetic ethanol continues to expand at a rapid rate. Carbide & Carbon will bring in additional capacity in West Virginia some time before the end of the year; Tennessee Eastman is building a large plant in Texas; National Petro-Chemicals is starting its new unit in Illinois; and one of the other present synthetic producers is reported to be adding capacity. Several additional companies have studied the possibilities of ethanol synthesis but, as yet, have made no definite plans.

In any event molasses is on the way out as an ethanol raw material. At the present time more than half the normal non-butadiene—ethanol requirements are provided by ethylene hydration. Completion of the units now under construction should provide capacity sufficient to produce nearly all ethanol, other than that from by-product sources, from ethylene.

A good portion of this increased capacity will probably be in operation before, or will begin coincident with, the shutdown of the butadiene-from-ethanol plants. Although the synthetic will to some extent replace ethanol which is now being produced from grain or blackstrap molasses, it will enormously complicate the problem of bringing stocks down to normal working levels, somewhat over one month's production. If "politics" should suddenly dictate an immediate shutdown of the ethanol-butadiene units, 1949 could be repeated.

Solvent and Satisfied

The problem of keeping technical and management men solvent and satisfied on Government salaries is in the news again. Latest incident is Dr. Edward U. Condon's imminent departure from the National Bureau of Standards to become research director for Corning Glass.

Despite pay increases of from 28 to 55%, and the creation of three new "super" Civil Service grades, work in industry still seems mighty attractive.

Back during depression days, the balance favored Government. During unsettled times, the relative security and stability of a Federal job with its liberal vacation program and a pension system were manna for many.

Since the depression, though, industry has become much more personnel-conscious. New and better vacation plans were advanced, hospital-



EDWARD U. CONDON: Washington exodus continues.

ization, life insurance and pensions became accepted things. Profit sharing and stock incentives also have been proposed by some companies.

Still, with these many incentives of industry, Government isn't having too hard a time recruiting the people it needs—especially young workers in the technical fields.

Many persons starting out in life work for the Government—though it may be at a financial loss—because of the training it gives. For example, Washington is a Mecca for lawyers who feel that their financial sacrifice in working temporarily for the Government is more than offset by their future salary potential. While probably not true to the same degree, many technical and management men have similar ideas.

Working conditions: Standard starting wage under Civil Service for someone with four years of college is \$3,100–GS-5 grade. On top of this comes a yearly wage increase of \$125, but most often a person is promoted to a higher grade—and more pay—before even the first year rolls around. Many of these promotions is to grade GS-7, with a \$3,825 check.

Of course, later grades don't come quite this easily, but it is far from impossible to get all the way up to GS-15, at \$10,300—usually a section chief. While the starting pay scales are the same for those in any type of work, administrative or technical, the higher one goes in Federal hierarchy, the more emphasis there is on administration. The more experience one has had, the higher is his grade. At lower levels, salaries in government are almost those of industry, but the

higher up you go, the more disparity can be found.

GS-15 used to be as high as one could go under Civil Service, but now the super grades GS-16 through -18 have been set up for the top few. Dr. Condon, as NBS chief, was in GS-18 and received \$14,000 per year.

Agency administrators directly appointed by the President are in general the only Government executives who receive more than this amount. Their pay is \$15,000.

Pensions and Vacations: Workers for the Government have had an excellent vacation system. All those under Civil Service receive 26 working days off each year. In the past it has been possible to accumulate up to 60 working days of vacation. A ruling last year specified that leave earned in 1950 must be used by June 1951, and this will be true in the future.

Congress is now considering changes in vacation allowances for government workers. Possibly a sliding scale may be set up, with only those employed, say, for five years or more getting 26 days. Odds are, though, that the time allowed to everyone will be cut to less than 26.

While present vacations are liberal, the Government is strict about the rest of the year. Workers must put in their 40-hour, 5-day week, and time taken out during the day for running personal errands is chargeable against annual leave.

The Government doesn't contribute to any hospitalization plan, though employes are allowed 15 days sick leave per year, cumulative to 90 days.

Most employees are eligible for retirement funds, into which they contribute 6% of their salary. The amount they receive upon retirement is based on their income during the best five years and the length of Government service.

Pension rates have almost doubled during the past 10 years. In 1939, a man with the Government for 30 years, whose best five years averaged \$5,000, would have received \$1,200 year. Now the rate is \$2,250.

Among the main advantages of working for the Government: generally not quite so demanding a pace, chance for better tenure, and—for research and technical personnel—opportunity for more "pure" than "applied" science investigations. Also, with some conspicuous exceptions, better research facilities.

Smears and Red Herrings: For top management men, the danger of irresponsible attacks on character and "trial by newspaper" is a definite deterrent to working in Washington.

As one of President Truman's administrative staff put it: "A businessman doesn't want to give up his Sunday afternoons at the country club and the comparative peace and quiet of Larchmont to be smeared all over the papers in Washington."

The case of Dr. Condon is a prime example. He was tabbed the "weakest link" in our national security during a headline-hunting Congressional probe, but was never given the chance to clear himself of this irresponsible accusation. Dr. Condon, unlike many men, was a fighter. He stood up for his rights and, in the eyes of most fair-minded persons, vindicated himself. Many persons wouldn't want to chance any damage to their reputations.

AEC Procedure: While most of Washington is allergic to the word "communist," probably the most careful investigation is carried on by the Atomic Energy Commission.

Because of the need for security clearance, workers for the AEC are not under Civil Service. Their employment regulations, however, are generally along the same lines.

In getting employees just out of college, AEC recruits directly through the schools but handles applications through regular Government channels. The more specialized training needed, the more troublesome recruiting becomes.

A deterrent to working for the AEC is the everlasting security consciousness, but this is somewhat balanced by the realization by those in chemical and physical industry that the best men must be found.

This appeal to patriotism, in time of cold, tepid or hot war is a definite Government asset. This is demonstrated in those who take jobs "for the duration," or in things like NPA's Nichols Plan.

[Mathieson Board Chairman Thomas Nichols, while NPA's number two man, conceived the idea of asking executives to come to Washington and work there for a six-month period (CW, June 30).]

As the plan is rolling, it looks as if this may be the answer to at least some of the Government's problems in getting the manpower it needs. But when it doesn't have the patriotism appeal, to fall back on, Government definitely lags behind industry in its opportunities and conditions for employment, and barring another depression, will stay behind.

A Sober Viewpoint

A firm calm voice spoke uncommon sense this week on the much debated subject of whether or not Federal controls on the use of chemicals in conjunction with foods should be increased. The voice was that of J. Albert Woods, president of Commercial solvents Corp. as he was interviewed by Chemical Week on the eve of his departure to address the National Agricultural Chemicals Association on the controversial subject.

Woods freely admits that his interest in the whole question of "chemicals in foods" focuses directly on the subject of pesticides and the proposed legislation that will handcuff the development of pesticides. Says Woods: "I am no crusader . . . I am merely an executive of a company that has had a modest role in development of chemical weapons for use against insects and plant diseases that, if unchecked, would destroy many billion dollars of crops a year in this country alone. Quite naturally then, I am appalled by the factless sensationalist statements that are flowing from irresponsible mouths and pens about the hazards of pesticides."

Wrong Emphasis: The chief fault of those who paint a "sinister" picture about the dangers of chemical pesticides, in Woods' opinion, is that "they handily ignore the great benefits derived from their proper use." Moreover, he points out, pesticides are chemical protectants rather than chemical additives and, as such, they are certainly not food additives.



CSC's WOODS: "More emphasis on fact, much less on emotion."

But the main contention of the CSC president's argument against further governmental controls is that the pesticide industry is "already one of the most regulated industries in the country." He has a very strong point here: More than 400 separate Federal and State legal requirements are on the books now to govern the manufacture, sale and use of pesticides. In addition, if the pesticide is used on foods, its residues may not exceed the tolerances set up by the Federal Food and Drug Administration.

Seven Steps: According to the experts, a total of seven major developmental steps must be taken in the grooming of a new pesticide. Overall time required: Anywhere from 1½ to 3 years. And even after this period of trial and tribulation, there is no guarantee that the market for the compound will justify the time, effort and money spent.

For this reason, Woods feels the proposed additional regulations would be particularly harmful to the future development of specific pesticides, where a market has limited potential from the start. And since no one pesticide can work well against all pests, in all climates and on all crops, the imposition of more governmental controls would be welcomed by a hungry insect world.

Action, Not Laws: Industry is criticized, and often rightly so, Woods says, for being quick to condemn, but slow to offer alternative plans for regulatory legislation. But he feels that in the case of pesticides, a better enforcement of existing laws, rather than the addition of new controls is the practical answer to the problem of how best to safeguard the public, and build better bug killers at the same time.

Contract Extended

The Atomic Energy Commission last week extended its contract with the Genera Electric Co. for operating the Hanford Works (Wash.) and the Knolls Atomic Power Laboratory in Schenectady, N. Y.

Under the terms of the extended contract, the government will foot the bill for all expenses incurred, General Electric will collect the customary one dollar fee. It is scheduled to run until June 30, 1956. At that time, the contract will be re-negotiated if both parties are agreeable.

General Electric took over the operation of the Hanford Works from the DuPont Co. in September 1946.

RATES OF RETURN OF LARGE VS. SMALL COMPANIES PERCENTAGES ON STOCKHOLDER INVESTMENT

INDUSTRIAL CHEMICALS	RAYON	SOAP & DETERGENTS	PETROLEUM REFINING
	19	40	
10% 16%	13% 8%	17% 18%	5% 8%
1999	19	50	
17% 26%	9% 18%	7% 21%	15% 14%

WHO MAKES MORE PROFITS: Large companies (shaded), in general, show better returns than smaller corporations.

How Size Affects Profits

New light on the much-argued question of most efficient size for chemical plants comes in FTC report.

Bigness, in general, means higher profits and better stability during economic storms.

Many chemical fields show high gains in percentage of returns of stockholder investments.

The most efficient size for a chemical company is something which executives often argue over a conference table, in a club car or after 18 holes of golf.

In general, the thesis is that bigness makes for efficiency in chemical companies. The big get bigger and the small get smaller.

A new report by the Federal Trade Commission throws some new light on the profits side of the subject. It shows that, in general, big companies tended to have greater profit precentages in 1950 than in 1940. Small companies, in some fields, show better profit standings, but in others, haven't kept pace.

FTC's report gives rates of return after taxes as percentages on stock-holder investment for 520 companies in 25 different industries. Companies surveyed in industrial chemicals, rayon, soap and petroleum refining accounted for well over 50% of the assets in the different industry classifications. Corporations are classified according to their major product.

A comparison between FTC profit

figures for 1940 and 1950 shows that three of the four strictly chemical fields were among the six industries showing the greatest increase in rates of return.

Industrial chemicals and rayon were close on the heels of motor vehicles and matches, which showed the greatest increase in rates of return. Each showed an increase of better than nine per cent. Petroleum refining came in sixth, with just under an eight per cent increase.

But while overall increases were interesting, the FTC's breakdown comparing rates of return on the four largest companies in each group with the rates of other corporations in the industry provided additional fuel for arguments on "most efficient" size.

Industrial Chemicals: FTC's reported rates of return for DuPont, Carbide, Allied and Dow—four largest chemical producers—were consistently greater than those of the other 24 corporations surveyed. Starting with 16% in 1940, their joint profit percentages went to 18% in 1947, 20%, 21% and then 1950's 26%.

The other 24 were 15% in 1947, but then slumped to 14% in 1948, 11% in '49 before jumping back to 17% for 1950.

Rayon Producers: The joint rate of return for American Viscose, Industrial Rayon, American Enka and Beaunit Mills, four largest corporations with rayon as their major product, was 8% in 1940, compared to an average 13% for smaller companies. (DuPont, a major rayon source, is not classified under rayon.)

The four corporations' rates of return went from 8% to 19% in 1947, up to 22% in 1948, tumbled to 12% the next year and then recovered to 18% for 1950. Smaller companies went from 13% in 1940 to 15% in both 1947 and 1948, dipping to a 5% loss in 1949 and then to 1950's 9% gain.

Petroleum: The four largest in the petroleum refining field—Standard of New Jersey, Standard of Indiana, Socony-Vacuum and Texas—showed a joint rate of return of 8% in 1940. Their 1947 figure was 13%, rising to 17% for 1948, to 11% and then to 1950's 14%.

The 34 other oil corporations studied by the FTC went from 5% in 1940 to 16% in 1947, 22% in 1948, down to 14% for 1949 and up to 15% for the 1950 figure. Only in petroleum was the profit rate of the small companies greater than the rate of return for the largest companies.

Soaps and Detergents: Three companies dominate this field, but while Procter & Gamble and Colgate-Palmolive-Peet publish financial statements, Lever Brothers does not.

The FTC, which has received profit figures from Lever, bulks these with four smaller companies surveyed.

The profit rate for the first, third and fourth ranking producers of soaps went from 18% in 1940 to 26% in 1947, 23% in 1948, 12% in 1949 and up again to 21% in 1950. Meanwhile, Lever and the four other producers went from 17% in 1940 to 16% in 1947 to 5% in 1948, a loss of 12% in 1949 and back to a 7% profit in 1950.

Overall Picture: While there are individual variations, the FTC survey shows forcibly that while big companies may not always show largest rate of return, the fluctuation is seldom as great as it is with smaller corporations. The small fellows, by dint of relatively smaller reserves, and a generaly smaller scale of business, aren't as able to weather economic storms without taking on more water.



... handling bulk materials of every description at phenomenal savings







-recognized across the nation

known for sound management, uses the Dempster-Dumpster System

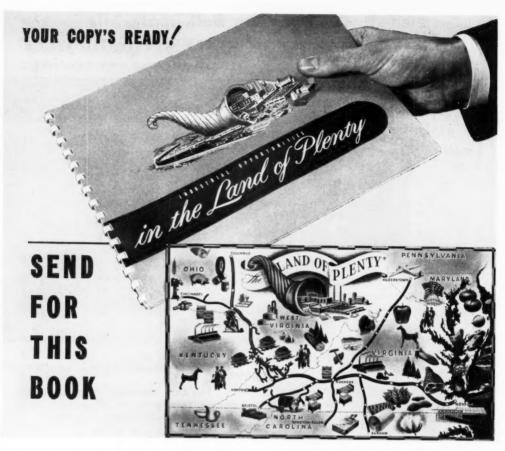
Photos show a Universal Type Container being loaded, Dempster-Dumpster ready to pick if up and place it in carrying position, and container being emptied. Entire operation is handled hydraulically by means of controls at driver's seat. The Dow Chemical Company is among the hundreds of well managed manufacturers, both large and small, who use the Dempster-Dumpster System of bulk materials handling . . . the system recognized across the nation for its efficiency and ability to reduce costs.

Increasing man-hour efficiency is one of the important advantages of handling bulk materials with the Dempster-Dumpster System. One Dempster-Dumpster, with only one man, the driver, services any number of detachable Dempster-Dumpster Containers, which are spotted at convenient materials accumulation points inside and outside plants. In this system there are no loading crews to stand idle while truck makes haul, and no re-handling of materials. Dempster-Dumpster Containers are available in a wide variety of designs and sizes, up to 12

tainers are available in a wide variety of designs and sizes, up to 12 cu. yds., to suit the type of materials handled—be they bulky, light or heavy . . . solids, liquids or dust . . . trash or rubbish. The Dempster-Dumpster System also reduces investment in equipment and maintenance costs . . . improves "housekeeping" methods . . . reduces fire hazards . . . and provides an easier, quicker, safer and more efficient manner of handling materials. It will pay you to investigate the Dempster-Dumpster System of plant materials handling now! Manufactured ex-



DEMPSTER BROTHERS, 291 Dempster Bldg., Knoxville 17, Tenn.



This book was prepared especially for men who are seeking good locations for new factories.

The Norfolk and Western Railway's Industrial and Agricultural Department has a half-century of experience, and a complete and intimate knowledge of this rich, progressive area. It is staffed by plant location specialists who will understand your problems. Their assistance is yours without obligation, promptly, reliably, and in confidence. Let them help you!

* The Land of Plenty—the six great states served by the Norfolk and Western—Virginia, West Virginia, Ohio, North Carolina, Maryland and Kentucky.

INDUSTRIAL AND AGRICULTURAL DEPT.,
DRAWER CL-414
NORFOLK AND WESTERN RAILWAY, Roanoke, Va.
Gentlemen: Please send me your free, color-tillustrated booklet, Industrial Opportunities In The Land of Plenty.
NAME
FIRM NAME

Norpolkand Westerse

What's in a Name?

It's more whistles and winks for Dagmar Chemical Co.'s representatives as TV's Dagmar becomes a national institution.° They find more open doors, and the company anticipates lower sales costs and a better sales curve, uses "Dagmar is Coming" teaser campaign to publicize products.

The Stamford, Conn., lacquer manufacturer had the name long before TV was commonplace—founded in 1931, it was named for a former partner in the business—and long before the statuesque blonde began filling video screens. But it soon found that prior ownership meant nothing; "Dagmar" was public property.

At first company executives were amused by the kidding the similarity between names evoked. Then they became annoyed as the switchboard received bothersome calls—from fans wanting autographed photos of the star and from gagsters wanting such things as a pail of Dagmar developing cream. Sometimes the morning mail brought a gem not commonly connected with the lacquer trade as letters miscarried.

The climax came when an indignant prospect accused the company of stealing the name to capitalize on the TV queen's prominence.

Psychologically Friendly: Then, about three months ago, Charles F. Krebs, Dagmar Chemical president, became conscious of a strange phenomenon: His field salesmen's successful calls were increasing in proportion to the TV star's rise in popularity. Trying to pin down the reason, he made inquiries among the salesmen, found that although their selling experiences were varied, they fell into a pattern.

A salesman on announcing the company name would invariably get a chuckle out of the receptionist. Inside, the purchasing agent would often be similarly affected, would respond with a grin and a glint at the mention of the magic word "Dagmar". Salesmen found themselves couriers of the latest Dagmar quips before the conversation got down to business.

The overall result was good: more open doors to the right contacts on a psychologically friendly basis.

Credit Where Due: This "psychologically friendly basis" has admittedly put more zoom in Dagmar Chemical's sales curve, and Krebs would



DAGMAR AND KREBS: Public property and private enterprise.

be the last to deny it. He is quick, however, to point out that the company's growth was healthy prior to the unintentional assist from the well-endowed entertainer. For while the industry average of paint, varnish and lacquer sales increases over the past ten years has been 16%, his firm has doubled volume in ten years, and will gross over \$1 million in the current fiscal year.

Krebs keeps track of his sales costs to the penny, and while he doesn't disclose them, he admits they have been too high. If TV's Dagmar will help to bring his sales costs in line, the difference is going into research, he proclaims, not without a trace of humor.

As a publicity gimmick, Krebs doesn't know how far the company should go in exploiting the situation. Should he, for example, offer her a post as "honorary vice president of sales"?

One tip-off on the future of company-comedienne relations may be the recent product display in the local railroad station, part of a continuing project for members of the Stamford-Greenwich Manufacturers' Council. For the first week, a teaser display merely carried signs to the effect that "Dagmar is Coming." Then came the unveiling of the booth containing products using Dagmar Chemical industrial finishes as well as two new anti-freeze products that mark the company's entry into the retail field: Champion (glycol-type) and U-Need-It (methanol-based).

The latter were introduced last year, and were distributed in Con-

necticut and Westchester County, N.Y. This year Pennsylvania will be added to the marketing area.

If visions of Dagmar have softened up tough purchasing agents they should have a similarly potent effect on the sales resistance of ordinary consumers. Krebs figures this is just compensation for sharing "Dagmar" with the rest of the country.

Uranium from on High

Prospecting for uranium in the Inter-Mountain area of the West has been stepped up to airplane speed. J. R. Simplot, Idaho's versatile industrialist, employs a small aircraft equipped with a radioactivity detector to locate new claims.

The plane zooms over a likely area at low altitude. Estimates of promising new deposits are based on the detector's reaction after standardization on a mineral area of known uranium concentration. Data gained in the air are passed on to ground parties for further investigation.

This coordinated air-ground operation has paid off for Simplot Industries to the time of more than 1,000 claims, most of them in Utah. But the other Inter-Mountain states haven't suffered from lack of attention. Simplot, the first to utilize Idaho's vast deposit of phosphate rock for fertilizer manufacture, believes the world's richest uranium field is here.

Pleased with his success, Simplot is expanding his aerial activities. Other mineral deposits will be the next targets in the novel bird's eve quest.

^{*}When Life cover-featured Dagmar recently, newsstand sales boomed an additional 175,000



WOLLASTONITE PLANT: Designed to be flexible.

Black to White

A big name in carbon black, Godfrey L. Cabot, gives promise of becoming a big name in white pigments. Early this summer (CW, June 23), Cabot took an option to buy a firm that holds a lease on land containing large reserves of wollastonite (calcium metasilicate). Present plans—which include a new, bigger plant—indicate Cabot will exercise its option within the next few weeks.

Actually, the arrangement covering the ownership of the land and mining the wollastonite is a complicated one involving four companies. The land (at Willsboro, N. Y., near Lake Champlain) is owned by Northern Minerals, Inc. Horizons, Inc. (Princeton, N. J.) owns 10% of Northern Minerals. Headed up by Eugene Wainer*, Horizon's research has been responsible for much of the progress that has been made in wollastonite technology.

Northern Minerals has leased the land to Willsboro Mining Co. on a long term basis. Cabot has presently a preferred ownership position in Willsboro Mining.

The deposit in Willsboro is one of the two known to exist in the country, the other is in Kern County, Calif. About fifteen years ago California wollastonite was mined to supply material for white mineral wool. And during World War II, small amounts were taken from New York for experimental use. It has been only recently, however, that any real commercial interest in the material has been aroused.

How Much: Exact extent of reserves in Willsboro is not known. One estimate has placed the amount of wollastonite there at 15 million tons, another, 3 million. Cabot has "proved" a million tons.

There are a number of applications for wollastonite, an even bigger number of eager would-be customers. The trouble has been that no one has been prepared to put up a plant guaranteeing the material's availability in the desired quantities. With Cabot prominently in the picture, its a safe bet that the assurance is forthcoming.

The present plant was designed with an eye toward flexibility rather than operating efficiency. Depending on the grade wollastonite that is produced, its capacity is 25 to 35 tons a day. The new plant will probably have a capacity of 100 tons a day.

Applications: The only present commercial use for wollastonite is in ground coat porcelain enamel. It provides an ideal way of supplying the needed calcium and silica, replacing flint and calcium carbonate. Wollastonite makes possible better heat exchange. It also means that carbon dioxide does not have to be driven off and dusting losses can be cut.

A ceramic grade wollastonite is on the verge of a commercial debut. It is recommended for use as a wall tile and a low loss electric insulator. Abundant and cheap, it replaces more expensive and scarce steatite grade talc. A host of other applications are small now, but each is capable of taking the entire output of the present plant. One of these is as a pigment for exterior white paints.

Future: A big question surrounding wollastonite: How does it stack up as a reinforcing agent for rubber? As yet, however, little has been done on the potential of wollastonite in rubber. For the time being, then, the question must go unanswered. But at least one expert says that from some aspects, it "looks promising."

Laymen Listened

Twenty-eight thousand tired but happy feet carried one half that number of chemists through the numerous technical and social functions that marked the American Chemical Society's Diamond Jubilee celebration in New York last week.

In the process, two dozen hotel lobbies became informal rallying places where both technical information and idle chit-chat jumped from mouths to ears with equal facility. And restaurants and cocktail lounges vied with the conference rooms where technical sessions were held in terms

of "box-office" appeal.

V.I.P.s Too: The celebrants of the ACS' 75th birthday were exposed to a galaxy of "very-important-people" from many walks of life. They heard Governor Alfred Driscoll (N.J.) praise the economic system that makes the function of technological research possible: they heard Harvard Prexy James Conant predict that the "atom age" is merely a brief interlude in progress toward a "solar age"; and they heard U.S. Vice-President Barkley (principal speaker at the Jubilee banquet) extol the virtues of the American way of life. They also heard the reading of a sober message from President Truman. and for a lyrical change of pace, they were treated to the delightful warbles of Metropolitan Opera thrush, Risé Stevens.

Mission Accomplished: But the crowning success of the meeting was that it accomplished its main goal of awakening millions of laymen to the role of modern chemistry. Everywhere in New York's streets, buses, subways and elevators, the voices of laymenclerks, bartenders and baseball fans -talked of the wonders of chemistry. And most of their remarks were spurred by what they had seen on their television screens, heard on their radios or read in their newspapers. In every sense of the word the noteworthy public relations aim of the meeting was realized.

^{*}Formerly with Titanium Alloys Manufacturing Co., now a division of National Lead. With Horizons, Wainer developed the company's novel process for producing metallic titanium, (CW, July 7).

Inquire first of Baker if you need

ELECTRONIC TUBE CHEMICALS

to a defined purity in TONNAGE lots



Particularly in demand are chemicals required for electronic purposes.

If you need such chemicals—either for defense or for civilian use, or for both—inquire first of Baker. Baker is adjusting its facilities to meet emergency needs, and can supply you with tonnage chemicals to known standards of purity. We will also be glad to discuss, in confidence, your requirements for tonnage chemicals to your own exacting specifications.

Baker has long been trained in the art of exactness. It has, for many years, supplied chemicals to a defined purity "by the ton." We invite you to call upon Baker—and to depend upon Baker as a reliable source of supply.

J. T. Baker Chemical Co., Executive Offices and Plant, Phillipsburg, New Jersey.

A few Baker ELECTRONIC CHEMICALS

Baker R500 (a prepared cathode spray)

Barium Carbonate
Barium Nitrate
Cadmium Salts
Strontium Carbonate
Strontium Nitrate
Triple Carbonates



Nacel

ACETONITRILE

NIACET Acetonitrile is a stable, clear, colorless liquid with an aromatic odor. It has a boiling range of 80 to 82°C., a purity of 99.0% minimum, and a specific gravity of 0.782 to 0.785 at 20°C.

SYNTHESIS

Acetonitrile is an excellent starting material for the manufacture of many organic compounds, some of which are triacetamide, thioacetamide, pyrimidines, and chloracetonitrile.

EXTRACTION

In the case of many mutually soluble compounds, one of the constituents may be soluble in Acetonitrile while the other is not; and frequently, the two constituents exhibit markedly different degrees of solubility at varying temperatures, Examples of applications of these characteristics are the use of Acetonitrile in the extraction of Vitamin A from oils in larger yields than possible with other mediums, the removal of fatty acids from tallow, and the separation of unsaturated from saturated acids

For further information write to:

Carbide and Carbon Chemicals Company

Union Carbide and Carbon Corporation

30 East 42nd Street, New York 17, N.Y.

"Niacet" is a registered trade-mark of Union Carbide and Carbon Corporation

BUSINESS & INDUSTRY.

Mathieson Chemical Co. has resumed construction work on its McIntosh, Ala., plant after a two-week shutdown by 120 striking AFL workers. The \$10-million plant will produce chlorine and caustic soda.

The men went back to work pending action of the Wage Stabilization Board on their demands. Controversy came over the demand for \$3 a day traveling time from Mobile head-quarters of the hiring contractors, Blaw-Knox Construction Co.

FOREIGN. .

Canada: Northwestern Pulp and Power, Ltd., is beginning construction of a \$5,000,000 ground pulp plant at Yates, Alta., 150 miles west of Edmonton.

Great Britain: The first three of 18 sulfuric acid plants being built in Britain will go on stream at Grimsby, Norfolk, in October. Two more in the same area will be ready by next Mav.

By 1954 it is expected that sulfuric acid production in Britain will go up from 280,000 to 900,000 tons, and by 1956 imports should be cut in half.

Greece: The Greek government has now worked out the invitation to bid for the establishment of a nitrogen industry in Greece. Conditions include: (1) the industry will use 100% lignite and no lignite briquettes; (2) the works shall be set up in the Ptolemais area; (3) the contractors will not be required to use exclusively the Rouen method for the processing of lignite.

Netherlands: Drachtster Latex-Industrie of Drachten (Netherlands) will go into production soon on plasoleum. The product consists mainly of latex and river sand, and has good properties of elasticity and resistance in use.

Plasoleum can be used as a floor covering, for sea protection, bridge membranes, wharf footing, and as an anti-corrosion material in machinery, pipes, etc.

Production will be set up in conjunction with Revertex Ltd., London, which is the latex supplier.

EXPANSION . . .

Phenolic Resins: Loven Chemical Co. will begin operation of its \$250,000 phenolic resin plant at Newhall, Calif., by the end of the month. About one million pounds of resin will be processed per month.

Aluminum: Harvey Machine Co. will receive a \$46 million loan from the

government for the construction of a "three-pot-line" aluminum plant at Kalispell, Mont. (Cost: \$34 million) and a unit near Seattle to produce the necessary alumina feed (Cost: \$12 million).

Antibiotics: Schenley Laboratories, Inc. will soon boost its production of penicillin and streptomycin by 30% at Lawrenceburg, Ind. The new construction is covered by a recently approved \$433,130 certificate of necessity.

KEY CHANGES.

Robert A. MacDonald: To head the development department of the Plant Food Division, International Minerals & Chemicals Corp.

Branford P. Hoffman: To fill the new position of purchasing supervisor at the Wilmington experiment station of Hercules Powder Co.

Wilder G. Penfield, Jr.: From assistant export manager to export manager, Chemical Division, The Borden Co.

M. H. Arveson: Elected a director of Indoil Chemical Co., subsidiary of the Standard Oil Co. of Indiana.

George M. Hebbard: Appointed deputy chief of the Inorganic and Agricultural Chemicals Branch of the Chemicals Division of the National Production Authority. Mr. Hebbard is on leave as vice-president of operations and engineering of the Davison Chemical Corp.

William Kaplan: From section chief in charge of technical service in the Texas City laboratory to director of the automotive research laboratory, Pan American Refining Corp.

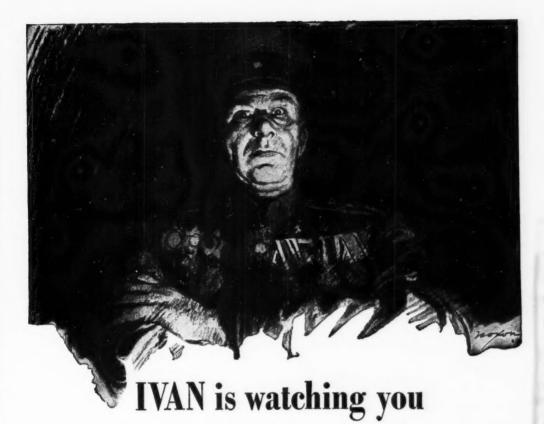
M. L. Studebaker: From consulting chemical engineer in the process engineering division to technical service engineer Philblack sales division, Phillips Chemical Co.

Gordon H. Chambers: From vice president and treasurer to executive vice president, Foote Mineral Co.

S. C. Ogburn, Jr.: From manager of research and development to vice president in charge of research and development, Foote Mineral Co.

L. G. Bliss: From director of sales and distribution to vice president in charge of sales, Foote Mineral Co.

Felix B. Shay: From production superintendent to vice president in charge of production, Foote Mineral Co.



IVAN is a dyed-in-the-wool Communist. There are only 6 million party members like him in all Russia, yet these Communist brass-hats enforce the iron dictatorship of the Kremlin over 200 million Russians.

He's sold to the hilt on Red ideas. Which means he's out to get you. He believes it's either you or him . . . that the world is too small for both.

Ivan is working hard to beat you down. He has a big head start.

Right now he's got you in a bad spot. Ivan is afraid of only one thing.

He fears your ability to out-produce him in guns, tanks, planes.

Frankly, he doesn't think you value your iree system enough to do it . . . to make willingly the sacrifices he has squeezed out of the Russians.

But he's wrong!

Because you and all of us have set out

to build more and better weapons-to do it faster all the time.

We must use every bit of know-how and inventive skill we have to improve our machines and methods-to turn out more and more for every hour we work. Only in this way can we become militarily strong.

But we've got to supply essential civilian

needs as well. We can't allow needless shortages to take prices skyrocketing and lower the value of our dollar.

Sure, that means sacrifices for everybody. But doing this double job well is the only sure way to stop Ivan in his tracks-and to save the freedoms which are ours and which he has never known.

FREE . . . this important booklet tells you how our American System Grew Great



MAIL THE COUPO!

How Americans developed better machines, power and skills to build a great nation . . . Why constantly more per hour .

we have been able to produce How this has given us the world's highest living standard.

How we can meet today's challenge-Why we must expand our productive capacity...supply arms and essential civilian needs, too. Read how this dynamic process works in free booklet, "The Miracle of America," endorsed by representatives of management and labor. Send for your free copy today!

Address Occupation_

This advertisement, approved by representatives of management, labor and the public, is published in the national interest

McGRAW-HILL PUBLISHING COMPANY





1 INITIATION OF KTPP development is discussed by planners Hafford, Ingerson, Young, Fuchs and Sharrard. "Go ahead" decision follows consideration of literature survey, properties, methods of sample preparation and production costs.

Birth of a New Phosphate Builder

A new chemical product doesn't just happen. It's the result of a subtle blend of many industrial talents. It requires careful planning and hard work by research, sales, technical service and process control.

Westvaco Chemical Division had all that and more in launching the newest of the complex phosphates—potassium tripolyphosphate (KTPP). The "more" was its spanking new Cartaret (N.J.) laboratories, visited this week by CW's camera.

The new Westvaco facilities serve a dual technical purpose. Laboratory and small-scale pilot development of new products and processes is one part of the picture; application and sales service, the other. Because the labs are adjacent to one of the major plants, consultation be-

tween researchers and production men is no problem.

Westvaco's forte is inorganics, notably phosphorus, barium and magnesium chemicals. It's latest, potassium tripolyphosphate, is right in character and a logical companion to fast-growing sodium tripoly, darling of household detergent formulators.

But it won't compete with it's sodium predecessor. Reason: The potassium salt is more expensive, yet not greatly superior in ordinary builder applications.

Potassium tripoly—by virtue of its greater solubility in organic and aqueous media—will step into special jobs which are beyond sodium tripoly's depth. Building nonionic detergents and potassium soaps are good examples. In addition, KTPP is an effective sequestering agent and



2 SAMPLE SYNTHESIS begins with the preparation of makeup liquor. Chemist adds phosphoric acid to KOH solution.



MAKE-UP LIQUOR is then dried and blended. This step is critical; poor blending means high proportion of insolubles.



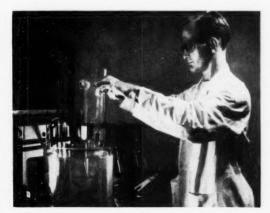
4 AFTER CALCINING, the potassium tripoly is separated according to particle size for physical and chemical tests.

should make a useful water softener. Other potential uses are: dispersing and deflocculating agent; buffer and complexing agent in electroplating solutions; and coagulant.

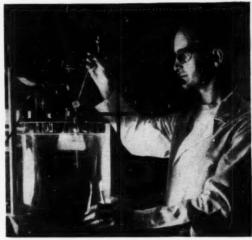
KTPP got its commercial start when Westvaco's Brad C. Hafford (director of Cartaret technical department), George F. Sharrard (technical service head), Harrison H. Young (sales problems), Thomas N. Ingerson (process control supervisor), and Robert J. Fuchs (miscellaneous development) sat down around a table and decided that its potentialities warranted a full development program.

Next came an intensive period in the laboratory to get better acquainted with the newcomer, discover its quirks and capabilities. KTPP showed well, received the joint blessing of those concerned.

Potassium tripoly is now available in development quantities. If its early care is any criterion, it should be a credit to the family name.



WATER-SOFTENING is also important consideration. Sample is compared to a standard by Navy turbidity method.



5 TECHNICIAN DETERMINES solubility in constant temperature bath with heat of solution apparatus.



6 DISPERSIVE ACTION is tested. Brookfield viscometers are used to check body of a clay slip containing KTPP.



B LABORATORY REPORT is turned over to the planning group for use in charting a market development course.

For high solubility and sequestration

Westvaco

POTASSIUM CHEMICALS TRIPOLYPHOSPHATE

This interesting complex phosphate has decided advantages wherever extremely high solubility and sequestration of calcium, iron and magnesium ions outweigh first-cost considerations. A white, deliquescent powder Potassium Tripolyphosphate is not a substitute for lower priced sodium phosphates but it can be the basis for the development of finer liquid soaps, textile processing agents and sequestering agents.

Our Market Development Division will welcome the opportunity to work with you on new uses for this unusual Westvaco Chemical

SEND FOR TECHNICAL DATA SHEET C-1

giving description, analysis, properties, and many suggested applications for Westvaco Potassium Tripolyphosphate.

Kindly address: Market Development Division

WESTVACO CHEMICAL DIVISION FOOD MACHINERY AND CHEMICAL CORPORATION

405 LEXINGTON AVENUE, NEW YORK 17 CHICAGO, ILL. + CLEVELAND, OHIO + CINCINNATI, OHIO ST. LOUIS, MO. + LOS ANGELES, CALIF. + NEWARK, CALIF

Out of Harm's Way

The threat of public exposure to radiation is coming in for a good deal of attention by insurance safety engineers. In a just-completed study, the Association of Casualty and Surety Companies reviews radioactive disposal methods, points out potential dangers.

Burial at sea in concrete-filled containers is now one of the safest ways of disposing of highly active radioactive wastes. Concentrated liquid wastes from hot laboratories are mixed with cement in oil drums and dumped in the sea 100 miles offshore.

These radioactive coffins also are buried in special fenced-off and posted areas. In addition to such obvious safeguards, the hot atom cemeteries are regularly monitored. Although the Atomic Energy Commission keeps a sharp eye on highly active radioactive wastes from isotope-producing plants, the disposal of less potent materials from hospitals and industrial laboratories is not under A.E.C. jurisdiction. Supervision is a lot looser, but the risk is no less great.

Road to Safety: Awareness of the dangers and use of protective devices can avert serious injury. Monitoring devices, exposure meters and protective equipment should be standard for workers. Particular care should be exercised when plumbing fixtures, sewage lines and disposal equipment are cleaned or repaired. Moreover, workers in sewage treatment plants which receive radioactive waste should receive the protection they now lack.

Another potential danger spot is the use of radioactive sewage as fertilizer. There now seems to be evidence to show that radioactive materials concentrate in sewage solids. These solids, processed and sold as fertilizer, may contaminate produce, with obvious consequences.

But the outlook isn't completely dark. The Special Hazards Committee of the Association states that the radioactivity of wastes receiving maximum dilution before being discharged into a river or stream "is so low that a human being would be unharmed even if he used the stream as his sole source of water supply for his entire lifetime."

Cold Latex: Development of seven varieties of a cold synthetic rubber latex by U.S. Rubber Co. is another step toward independence from the Far East. The new latex approaches natural rubber latex in service and wearing qualities. The new types show

promise in the manufacture of rayon cord tires, sheet packing materials and brake linings.

Antihistamine Test: A new colorimetric method for the determination of the important antihistamine, Neo-hetramine, involves heating with 2-thiobarbituric acid and measurement of absorption at 5,100 Angstroms.

Richer Fuel: Phillips Petroleum Co. researchers report (U.S. Patent 2,560,-898) that methyl-pyridines enrich high-octane isoparafin fuel with no undesirable side-effects.

Steroid Source: J. L. Hopkins & Co. of Brooklyn is now producing pilot quantities of diosgenin acetate. The steroid recently made news as the starting material in Syntex S.A.'s cortisone synthesis.

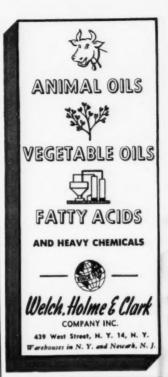
Sulfur Recovery: Allied Chemical and Dye Corp. has recently patented (U.S. 2,563,437) a novel method for recovering sulfur from hydrogen sulfide gas. Hydrogen sulfide is passed through a solution made by contacting sulfur dioxide with dilute aqueous aluminum sulfate in sulfuric and sulfurous acids. Sulfur settles out.

Sisal Cortisone: Hecogenin—a promising cortisone starting material—has been isolated from British East African sisal waste. Current research is aimed at determining if it can be converted profitably into cortisone.

Lignite Lab: Secretary of the Interior Oscar L. Chapman will dedicate the Charles R. Robertson Lignite Research Laboratory of the Bureau of Mines on September 29 at Grand Forks, N.D. The new laboratory will concentrate on a program designed to increase the use of lignite fuels.

Reactor Grads: Forty-six students at the Atomic Energy Commission's School of Reactor Technology at Oak Ridge recently completed the pioneer course. The grads will bring their new knowledge to 18 industrial companies and government agencies. Among them: General Electric Co., Consolidated-Vultee Aircraft Corp., Monsanto Chemical Co., Phillips Petroleum Co., E. I. du Pont de Nemours & Co. and Westinghouse Electric Corp.

Vitamin from Sewage: Fertilizer made from Milwaukee's sewage may soon be used as a source of vitamin B₁₂. Miner Laboratories of Chicago worked out the process after five years of city-sponsored research.





As the American Chemical Society celebrates its Seventy-fifth Anniversary, Foster D. Snell, Inc., celebrates its Thirtieth.

Our Research Laboratories are always alert to advance the arts of progress through chemistry.

Send For
"30 Year Story in the
Lighter Vein"



PROBLEM ...

... concrete for highways, that will withstand the destructive effects of freezing weather.

SOLUTION...

... cement made with Vinsol ... a low-cost, readily available Hercules resin. When added to Portland cement in minute quantities, neutralized Vinsol makes concrete that's filled with tiny bubbles of air. This entrained air serves as an internal "cushion" against alternate freezing and thawing ... prevents damage to the pavement.



Vinsol Paves The Way

RESULT...

... longer-lasting concrete roads that cost less to maintain. Air-entrained concrete also is easier to handle, stays mixed, does not settle out. Today, the use of Vinsol far exceeds that of all other air-entraining agents combined. Notable jobs for which air-entrained concrete was specified recently include the new Delaware Memorial Bridge. More than 6,000,000 cubic yards will go into Hungry Horse, Bull Shoals, and Clark Hill dams.

Vinsol paves the way to product improvements or economies in many industries. In plastics, this readily available resin is used as a modifier or extender for phenolics and other resins—in paper laminates, in thermoplastic compositions, as a binder for rock wool and glass wool bats, and as a component in phonograph records. It stiffens paperboard and leather, has good electrical insulation properties, is useful in adhesive compositions, and is a moneysaver in dark-colored protective coatings and printing inks. Write for technical information on Vinsol and a generous testing sample.

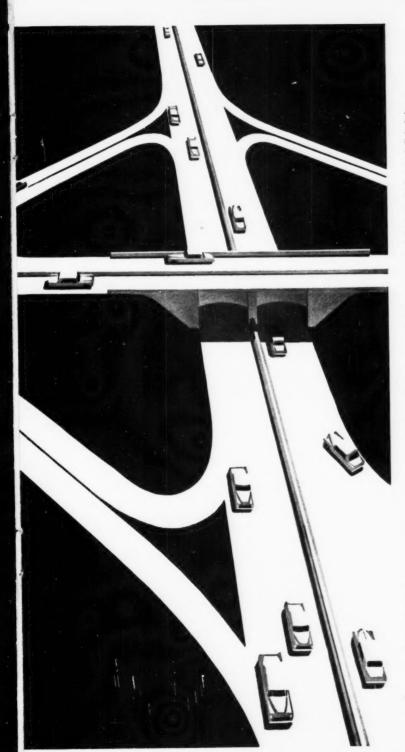
HERCULES POWDER COMPANY 992 Market St., Wilmington, Delaware Sales offices in Principal Cities

HER.CULES

SYNTHETIC RESINS-CELLULOSE PRODUCTS-TERPENE CHEMICALS-ROSIN AND ROSIN DERIVATIVES - CHLORINATED PRODUCTS - OTHER CHEMICAL MATERIALS FOR INDUSTRY









Growing Amine Family

An increasing number of useful products are being derived from Hercules Rosin Amine D. Although available now only in limited commercial quantities, these salts and derivatives are finding application in such widely diversified products as active fungicides, bactericides and algaecides, corrosion inhibitors, and flotation agents.

Among the salts and derivatives of Rosin Amine D now being supplied are the acetate, the naphtenate, and the stearate. When reacted with ethylene oxide, Hercules obtains certain polyethanols of rosin amine. Rosin Nitrile D, an intermediate in the manufacture of Rosin Amine D, is being produced on a limited commercial scale.

A new unit to expand commercial production of rosin amine and its derivatives will be located at Hercules' Hattiesburg, Mississippi, naval stores plant. The unit is expected to be in operation in the summer of 1952.

New Military Lacquer Spec.

A new military specification for lacquer is now issued and official. Identified as "Military Specification MIL-11195 (ORD) Lacquer, Lustreless, Hot Spray (For Ammunition)" the specification covers lacquer intended primarily as one-coat finishes for phosphated or primed shells, bombs, grenades, or other ammunition components.

This new specification provides the military establishments with a means whereby they can obtain the time-saving and cost-cutting advantages of high-grade lacquer applied by the hot-spray process in one coat, or can thin the lacquer for room temperature application, if this is more suitable.

New Resin Ready

Cellolyn. 106, Hercules' newest lacquer resin, is now available in quantity. It is a hard, rosin-based resin, markedly self-plasticizing, and is intended to replace both the hard resin and the oil in the average lacquer formulation.

This new resin combines some of the more useful characteristics of the rosin-based semi-alkyds with the well-known economy of the hard maleic resins. Cellodyn⁸ 106 provides, on an economical basis, unusual flexibility, as measured by cold check resistance. It represents the most recent advance in lacquer resin chemistry, yet requires the minimum amount of certain critical materials.

GC51-5



CAPRYL ALCOHOL

CH₃(CH₂)₅CHOHCH₃

Do you want a low-cost chemical intermediate for the manufacture of plasticizers, such as dicapryl phthalate—synthetic resins, such as alcohol-modified urea formaldehyde—oil additives—xanthates—methyl hexyl ketone—or as an anti-foaming agent? Here's one at an economy price. Rohm & Haas Capryl Alcohol is a secondary aliphatic alcohol, containing 10-15% methyl hexyl ketone. It is compatible with most organic solvents and is water-insoluble. It is useful as a high-boiling solvent.

Physical properties:

Boiling range Specific gravity Weight per gallon Flash point Color 90% between 174° C. and 180° C. 0.814-0.820 at 20° C. 6.8 pounds 164° F. Water white and clear

AVAILABLE AT ONCE IN TANK CAR QUANTITIES— ONLY 191/2c PER POUND F.O.B. PHILADELPHIA (Smaller quantities proportionately low-priced)

PHONE OR WIRE YOUR ORDER

CHEMICALS R FOR INDUSTRY

ROHM & HAAS

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

PRODU





BEFORE: FIRST STEP took place outside. It was EMPTIES WERE HANDLED several times in process of fling them at central station, trucking them to shipping platform. EMPTIES WERE HANDLED several times in process of fil-

Job Analysis Saves Time, Money

pany are alert, well-trained super-visors at the "working level." Realizing this, DuPont puts its foremen through a work simplification training program designed to instill a "feel" for job analysis in supervisors. In most cases the training has led to safer and smoother operation of the

Prized assets for any chemical com- company's plants, and, best of all, to a sizable dollar saving.

A materials handling problem at a company plant is a case in point. General Foreman Ed Jacobs noted that packaging and shipping a dye-stuff entailed a lot of waste time and motion.

His analysis showed that drums

were received by the stores department, transferred to trucks and delivered to a remote part of the shipping area. They were moved by hand truck to the filling station, weighed and moved to the shipping platform. Total time required: twelve minutes, plus a 200 ft walk with each drum. Jacob's study showed that by ex-



NOW: EMPTIES COME IN on freight siding. Foreman Jacobs (right) and supervisor look over new shed.



FILLING AND WEIGHING are done at a new stationwithin a few feet of new storage location.

tending an existing obsolete pipe line the drums could be filled at a station much closer to the shipping platform. That would eliminate part of the difficulty of the old route; the men would be moving empty drums most of the way. But it still left room for improvement.

Jacobs realized then that a railroad track ran alongside a storage shed adjacent to the new filling station. He talked it over with officials of the stores department, found them eager to eliminate the transfer to trucks by direct delivery to the storage shed.

Armed with his data and diagram, Jacobs went to his supervisor, quickly sold him on the idea.

Result: Time spent for each drum has been cut from twelve to five minutes, the distance travelled from 200 to 40 ft. Furthermore, the shorter haul makes the job safer. And the system saves the company around \$5,500 per year.

being designed and built by the Galigher Co., is expected to increase the useful reserves of halloysite clays found in the intermountain west,

Such clays, presently mined in large quantity at Dragon Consolidated Mining Co.'s Eureka, Utah, mine and soon to be mined in the Park City district as well, contain sizeable proportions of pyrite, an impurity that has made the clay unsuitable for processing into Filtrol's oil cracking catalysts. The new operation, to be in use by the end of the year, will cost the company about \$50,000.

The flotation unit will first bring clays from the present washing thickener; then they will be pumped up an incline and run through a "flotation rougher". The latter will remove most of the iron concentrates, with the tailings of purified clay returned to the existing circuit. The iron concentrates, still containing some useable clay, will be sent on to a pair of additional cleaners. At each point additional purified clay will be returned to the main circuit, with the iron concentrates continuing on to a storage pond.

This addition to the new \$3,500,000 plant is expected to bring into use clays known to exist at many lead-silver-zinc mines in the region, but which have hitherto been unable to meet specifications.



GP PRESIDENT MINCKLER AND IDEA MAN HANNON: They both profited.

Hopper Pickup Saves Shutdowns

A hopper device that permits workmen to take catalyst samples without interfering with operation of a Theromfor catalyst cracking unit is the brain-child of Howard H. Hannon, General Petroleum refinery worker at GP's Torrance, Calif., refinery.

With the new device, it is no longer necessary to stop operation of the bucket elevator conveyor that carries the catalyst from a regenerator to the cracking unit. Previously, refinery workers had to stop the elevator and take the sample with a scoop from the hopper. Temperature of 900 F and danger of spilling catalyst into the units (and thereby causing expensive shutdown time for cleaning) made the operation difficult.

Hannon's device is lowered through an access door into the elevator hopper. The catalyst falling from the regenerator into the hopper fills the device, which is then withdrawn so that condition of the catalyst can be checked.

Fat Savings: General Petroleum engineers estimate that savings of many thousands of dollars annually will result from Hannon's invention. Items of savings include less wear and tear on the elevator, because it need not be stopped and started again under load, and fewer hours of down time for cleaning out spilled catalyst.

General Petroleum awarded Hannon \$1500 for his idea under the company's suggestion plan.

Clays Without Pyrite

Filtrol Corp.'s year-old Salt Lake City plant, which produces catalytic cracking agent beads from halloysite clays, will be improved shortly by the addition of a flotation unit to extract pyrites from the Utah clays now handled by the firm. The new unit,

EQUIPMENT. .

Equipment Engineer's Association: The Chemical Equipment Sales Engineers Association has been formed by a group of eighteen sales engineers in the chemical equipment field. Membership will be limited to qualified sales engineers in the New York District. First officers: president, Kenneth S. Valentine, Patterson Foundry & Machine Co.; vice-president, J. Robert Powers, Baker-Perkins Co.; secretary-treasurer, Lawrence T. Johnston, Brown Fintube Co.

Pipe Joint: Electro Chemical & Mfg. Co. has developed a new type wrapped joint for Haveg and other resinbased pipe. The Duro-Joint, as the new coupling will be called, is composed of a spiral wrapping of glass cloth and Lecite acid and alkali-proof furan resin cement. The joint is equal in strength and chemical resistance to the pipe itself. The new joint can be used to replace flange-type joints, to repair broken pipes or to armor porcelain or stoneware.

No failures were noted under hydrostatic pressure that pulsated rapidly from 0 to 350 psi; nor when the



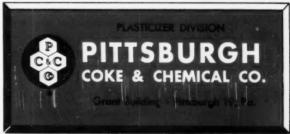
We're basic in Plasticizers, too!

Did you know that the Pittsburgh Coke & Chemical Company now produces plasticizers too? Pittsburgh PX Plasticizers are just one of the groups of basic products we're supplying to the important plastics industry. Many of the coal chemicals which we produce—phenol, cresol, benzene and phthalic anhydride, to name just a few—are vital to the production of

plastics, rubber and protective coatings for both peacetime and military production.

When you see the Pittsburgh Coke & Chemical Company name or trademark, remember that they represent a basic, integrated organization supplying industry and agriculture with a wide and diversified family of useful products.

1	DiButyl PhthalatePX-104
7	DilsoOctyl PhthalatePX-108
1	DiOctyl PhthalatePX-138
1	DilsoOctyl AdipatePX-208
3	DiButyl Sebacate
1	DilsoOctyl Sebacate
1	* TetraHydroFurfuryl OleatePX-658
1	TriCresyl Phosphate



COKE . CEMENT . PIG IRON . COAL CHEMICALS . ACTIVATED CARBON . AGRICULTURAL CHEMICALS . PROTECTIVE COATINGS . PLASTICIZERS

You Get Trustworthy Liquid or Gas Cooling With Great Cooling Water Savings from the NIAGARA AERO HEAT EXCHANGER

● You can cool air, gas, water, oils, chemicals, electric and power and process equipment, engines, mechanical processes with lower cost and really accurate control of temperature with the Niagara Aero Heat Exchanger.

You are assured of uniform, constant production and quality from any process . . . steady, reliable operation . . . lower cost for more dependable cooling. You can have closed system cooling with freedom from scale, dirt, corrosion and maintenance troubles. You can accurately cool more than one type of liquid with one machine.

The Niagara Aero Heat Exchanger uses atmospheric air to cool liquids and gases by evaporative cooling. You can remove heat at the rate of input to keep accurate control of gas or liquid temperature. You can put heat back into the system to save the losses of a "warm-up" period or to equalize the effect of load variations.



Great savings in cooling water and savings in piping, pumping and power return the cost to you quickly. The Niagara Aero Heat Exchanger can save you approximately 95% of your cooling water cost. Write for Bulletin 96.

NIAGARA BLOWER COMPANY

Over 35 Years Service in Industrial Air Engineering

Dept.C.I., 405 Lexington Ave.

New York 17, N.Y.

Experienced District Engineers in all Principal Cities

PRODUCTION . .

joints were placed under 100 psi steam pressure, the pressure released and the joint immersed immediately in 60 F water.

Cheaper Light: A new incandescent lamp for use in hard-to-reach dusty areas will be available from Westinghouse Electric Corp. some time this fall. In such areas efficiency of the usual pear-shaped lamp is reduced by dust collections on the top surface. But the new lamp maintains constancy of light output by use of a built-in silvery reflector at the top of the bulls.

Stronger Flooring: The life span of an industrial floor material, made up of asphalt, limestone rock and asphalt emulsion, is greatly increased by addition of a small quantity of pulverized natural rubber.

According to Flash-Stone Co., producer of the new product, britteness at low temperatures is reduced, the tendency to rut or wave under heavy loads is decreased and greater traction is provided when the floor is wet.

A one-half inch layer of the new Immediate-Set flooring is suitable for floor resurfacing and for patching small damaged areas. The floor is usable immediately after it has been tamped or rolled out to produce a level floor.

Graph Paper: Uninterrupted curves from plus infinity to minus infinity, including zero as well, are possible when the new Arktan arctangent coordinate graph paper is used. Typical applications include radioactive decay curves and heating and cooling curves. The paper is available from Orbit Electric Co.

Branson Instruments, Inc.: Doubled floor space in Branson's new plant at Stamford, Conn., will enable the company to expand production of ultrasonic thickness gages, ultrasonic flaw detectors and other electromechanical devices.

Filter Cloths: Filtration Engineers, Inc. is now manufacturing two new Feon dynel filter fabrics. Chief advantage of the new materials: They permit a higher rate of flow than previously available in filter cloths made from synthetic fabrics. The spun staple construction of the chemically resistant dynel fiber also provides ready sealing to the frame of the filter press.



HARDESTY FATTY ACIDS

Red Oil

Stearic Acid

Hydrogenated Fatty Acids

Animal and Vegetable Fatty Acids

Glycerine

White Oleine

Stearine Pitch

W. C. Hardesty Co., Inc., for 25 years a dependable source of quality products, is now reinforced by the extensive research facilities of Novadel-Agene Corporation and its affiliate, Wallace & Tiernan Co., Inc.

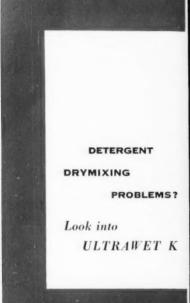
With expanded production programs at its two plants and a larger technical field staff, W. C. Hardesty Co., Inc. is better equipped than ever to serve your needs promptly and precisely.

Look to W. C. Hardesty Co., Inc. for new developments in Fatty Acid Chemistry and for continued high standards of quality control to help you maintain your production at uniform topquality levels.

W. C. HARDESTY CO., INC.

41 EAST 42ND STREET, NEW YORK 17, N.Y. PLANT: DOVER, OHIO

W. C. HARDESTY CO. OF CANADA, LTD., TORONTO, CANADA





Want to get more flexibility and lower costs in your cleaning formulations? Then we have a hunch you will be interested in 85% active ULTRAWET K.

This alkyl aryl sulfonate has only 15% sodium sulfate which allows you freedom to select your own combination of builders and extenders. Costs can be pared too because Ultrawet K's 85% active flake means a real saving when compared to less active flakes. Another plus for this concentrated synthetic detergent—it can be stored in a smaller space.

We'll be glad to send you a bulletin showing the effects of mixing equipment—and the effects of builders—on the densities of the final product. Write The Atlantic Refining Company, Chemical Products Section, Dept. B-1, 260 S. Broad Street, Philadelphia 1, Pa.

Without obligation, please send me further information on Ultrawer K.

(Dept. B-1)

Name

Company ______



SOME OF THE ATLANTIC PETROLEUM CHEMICALS ARE CURRENTLY IN SHORT SUPPLY

IN THE EAST AND MIDWEST

THE ATLANTIC REFINING COMPANY

Philadelphia · Pittsburgh · Providence · Charlotte · Chicago

ON THE WEST COAST

L. M. BUTCHER COMPANY
San Francisco · Los Angeles · Seattle · Salt Lake City · Portland

In Commi

NAUGATUCK CHEMICALS . . Division of Dominion Rubber Co., Ltd. Elmira • Montreal • Toronto • Windsor • Winnipeg • Saskatoon • Calgary

SPECIALTIES



A DOG'S LIFE: About \$6 million worth of itch.

Cleansers for Canines

Keeping dogs flea-free is a \$6 million business for about 50 companies, of which three are the national leaders.

Most formulators are looking with favor on lindane, although chlordane, methoxychlor, sometimes DDT and the older insecticides—rotenone and pyrethrins—are still used in proprietaries for pets.

"Home is where the heart is" may be the old saying, but for 50-odd manufacturers of pet specialties, the theme is now "Home is where the dog is." There's a vast, expanding market in preparations for pets.

The importance of the market was highlighted last week when Polk Miller Products of Richmond stepped up its campaign for "Sergeant's Skip-Bath," a preparation banishing dog B.O. for week-long periods.

Polk Miller rates itself number one in the dog's big three along with William Cooper and Nephews of Chicago (trade name Pulvex) and H. Clay Glover of New York.

Main standby in the pet care field are preparations for de-fleaing and de-ticking, though internal wormers and similar compounds also are significant. Basis for the whole market is an estimated dog population of 22 million, growing by arfs and bounds. About 70 percent of all homes in rural areas have at least one dog, though the percentage drops to about 25% in urban areas.

Most widely accepted insecticide for

flea preparations is lindane, but chlordane, methoxychlor, rotenone and pyrethrins are also employed. DDT finds occasional use, but now primarily in preparations for ridding dogs of ticks.

Sergeant Formulations: Polk Miller's Skip-Flea has rotenone for its main ingredient, though its Skip-Tick now uses chlordane, and may be about to go to lindane. The preparation is about 4 years old, and first contained benzene hexachloride, from which it went to chlordane, to avoid objections to hexachloride's smell.

Cooper's Pulvex Flea Powder started with rotenone, switched to dry DDT until unfavorable publicity came out on danger to cats because of their licking habits. From here, thiocyanate was used, though this was unsatisfactory. When the Government allowed use of rotenone, Cooper switched back to this, changing to lindane this year. In addition to being cheaper, lindane allows claim of ridding ticks in addition to fleas.

Aerosol Product: An aerosol flea killer and deodorant which began national distribution in May uses

pyrethrins, piperonyl butoxide, methoxychlor and oil compounds and propellant.

Cooper's tick powder is about to be discontinued, since its "all-purpose" flea (and tick) powder has seriously cut into market.

Lindane is not used by Glover, which is satisfied with results shown by its present pyrethrin-rotenone mixtures. For tick removal, Glover merchandises a DDT formulation.

New Ideas: So far, Polk Miller's Skip Bath seems to be the newest (and hottest) pet care item on the market. Just 79¢ buys a pint bottle good for three to six weeks, depending on the size and hygiene habits of the dog. Sprinkled on, rubbed in and wiped off, one treatment kills odors and insects for as much as a week.

Ingredients used in the compound include methoxychlor, trichloroethane, rotenone, piperonyl butoxide, dipentene, paracymene, paramenthane, terpene hydrocarbons, 6-propylpiperonyl ether, and isooctylphenoxypolyethoxyethanol.

Bomb Repercussion

A suit seeking damages of \$101,000 has been entered in the Philadelphia Common Pleas Court against Krylon, Inc., by Raymond H. Lutz, of Bridgeport, Conn., who claims development of "aerosol" plastic spray.

Lutz is listed in the court papers as owner of Aero Reproduction of New England, Bridgeport.

The current suit stems back to 1949 when he sued Foster and Kester, Inc., of Philadelphia, and Bridgeport Brass Co., Bridgeport, on a charge of conspiracy to deprive him of the results of his method of spraying plastic.

Lutz avers that in 1948 he signed an agreement with Foster and Kester, now Krylon, Inc., providing exclusive distributorship of its plastic materials in Connecticut. He says there was no known way of applying plastic like a paint, but that he eventually perfected a method of doing so with the assistance of Bridgeport Brass. This employed an aerosol bomb manufactured by Bridgeport, with Freon gas as the propellent to form a plastic spray. He claims that previously these bombs had been used only for insecticides.

The plaintiff charges that:

 He sold all interest in the invention to Foster and Kester and was to be paid off under a schedule of payments, while at the same time,



MAGNESIUM OXIDE

light and heavy

MAGNESIUM CARBONATE

U.S.P. light and Technical light



GENERAL MAGNESITE & MAGNESIA CO.



in Magnesia

MANUFACTURERS - IMPORTERS - DISTRIBUTORS

300 GRAVERS ROAD

. . PLYMOUTH MEETING, PA.

OLDBURY

ELECTRO-CHEMICAL COMPANY

PHOSPHORUS (Yellow or White)

PHOSPHORIC ANHYDRIDE

PHOSPHORUS OXYCHLORIDE

PHOSPHORIC ACID

PHOSPHORUS TRICHLORIDE

SODIUM CHLORATE

PHOSPHORUS PENTACHLORIDE

POTASSIUM CHLORATE

PHOSPHORUS PENTASULFIDE

POTASSIUM PERCHLORATE

PHOSPHORUS SESQUISULPHIDE

HYPOPHOSPHITES

AMORPHOUS PHOSPHORUS

OXALIC ACID (Powdered or Crystal)

ZINC PHOSPHIDE

Plant and Main Office: NIAGARA FALLS, NEW YORK

New York Office: 19 RECTOR ST., NEW YORK 6, N.Y.

SPECIALTIES . .

the company extended his exclusive distributorship another year.

- He has not been paid commissions and payments due him in 1948 and 1949.
- Foster and Kester entered into an agreement with another firm, D. E. Stanford Co., of New York, Los Angeles and San Francisco, giving it the exclusive distributorship in this country, Alaska and Hawaii.
- Foster and Kester also entered into an agreement with Bridgeport Brass giving it the right to use Foster and Kester's plastic formulation in its bombs.
- Bridgeport Brass has made 2 million bombs since he devised the method.

Suit Stymied: The Pennsylvania Supreme Court in a recent ruling said Bridgeport Brass Co. could not be sued in Philadelphia, thus overruling a Philadelphia Court decision on an objection filed by the Bridgeport firm before the suit could be heard back in 1948.

Hence, the current suit against Foster and Kester (or Krylon) filed by Abraham Wernick, Lutz' attorney. Wernick says that if Lutz receives a favorable decision in his suit against Krylon and Krylon is unable to meet the court decision satisfactorily, he will sue Bridgeport Brass in Connecticut.

Krylon has filed an answer asking dismissal of the suit and listing its reasons. Lutz' attorney has filed a counter-answer.

The case if brought to trial will be entered on the November or January calendar.

Digging for Sales

A spore-containing powder which kills Japanese beetle grubs and a plan for selling whole community areas on its coordinated application are the keys to the increasing success of a McLean, Va., firm, Fairfax Bio-Lab Sales.

The company is a brainchild of a Washington attorney. Frank Hyde, who had been handling sales of a USDA-developed grub killer—Milky Disease Spore Powder—for the Fairfax Biological Laboratory of Clinton Corners, N.Y.

The powder was a good one. It was specific for the Japanese beetle grub. (It killed almost 100% of the grubs in an application area.) But still, it didn't sell because there was always one objection: "What good does it do me to use it on my lawn if none of my neighbors does?"

To take care of this objection, Hyde



Sorbitol and glycerin belong to the same chemical family—both are polyhydric alcohols. Aside from that, each shows special advantages in many varying uses. Sometimes, best results are achieved by *mixing* sorbitol and glycerin. And each of these polyols has certain specific applications where other polyols are not appropriate.

It will pay you to learn all about the difference in the physical properties of these two polyols. For example, pure sorbitol is a crystalline product. The sorbitol solutions that Atlas sells—including non-crystallizing types—are higher in viscosity than glycerin and are non-volatile. Sorbitol holds less water under equilibrium conditions, gains or loses moisture more slowly with changes in humidity.

Atlas makes sorbitol from abundant agricultural products and is doubling its facilities to meet defense and civilian requirements.

New sorbitol production will be ready in a few weeks

So, plan now to make the most of sorbitol's advantages. Quantities for large-scale plant-trial are available on short notice.



INDUSTRIAL CHEMICALS DEPARTMENT



ATLAS POWDER COMPANY, Wilmington 99, Del. • Offices in principal cities • Cable Address—Atpowco ATLAS POWDER COMPANY, CANADA, LTD., Brantford, Canada

NOW...Longer Shelf Life for White Mineral Oil

Sonneborn Chemists have discovered that adding Vitamin E (Tocopherol) to mineral oil will make the oil much more stable - safeguarding it against the development of unpleasant taste or odor. This, of course, means longer shelf life for Sonneborn's new fortified mineral oil.

Yes, U.S.P. approves. A new amendment to the U.S.P. standards for liquid petrolatum authorizes the use of Vitamin-E-fortified mineral oil.



White Oil, Petrolatum, and Sulfonate Division, L. Sonneborn Sons, Inc., 300 Fourth Avenue, New York 10, N. Y.

BORIC ACID

Technical U.S.P. Crystal Granular **Powdered** Impaipable

Anhydrous Boric Acid

Borax Borax 5 Mol. **Anhydrous Borax Borax Glass** Ammonium Biborate Ammonium Pentaborate

Potassium Pentaborate Sodium Metaborate *Anhydrous Rasorite

*Rasorite Special Concentrates

Special Quality

Granular

*Fertilizer Borates (Regular and High Grade)

HERBICIDES

- *Borascu *Borascu 44
- *Concentrated Borascu

*Sodium Borate Concentrates which offer economical sources of Sodium Borate for special applications.

Polybor Polybor Chlorate 88

Complete Information Samples and Bulletins on request

PACIFIC COAST BORAX CO.

Cleveland Chicago

The time and the same and

SPECIALTIES .



FRANK HYDE: He gets whole communities behind his product.

started his company, which, in addition to selling the powder, would also apply it. The selling method, however, is an inexpensive one. Hyde gets garden clubs or civic organizations interested in community-wide applications, and has club members canvass their neighbors.

In the different areas last year, the number of cooperators in each group averaged above 90%, a tribute to the success of using a local canvassing

Hyde's firm takes most of the output of the two companies making the powder: the Clinton Corners organization and J. A. Ditman, of Laurel, Md. (Despite the similarity in names between Fairfax Biological Laboratory and Fairfax Bio-Lab Sales, their relationship is nothing more than a friendly producer-customer one.)

Both Fairfax and Ditman produce the spore powder under patent license from the U.S.D.A. Four companies had been issued licenses, but because the process is so difficult these two are the only ones now in business.

Digging for Grubs: This spore powder is made only by incubation in Japanese beetle grubs. Hence, workers for the two companies dig grubs and inoculate them with spores (originals obtained from the USDA). Injection must be subcutaneous-too deep an inoculation is no good.

The bacteria increase, making the blood of the grubs milky rather than clear (hence the disease name). When the grubs die, the bacteria revert to a tough, resistant spore form. The dead grubs' bodies are ground up and mixed with tale to make the powder.

Production is further restricted

BORIC

ACID.

OTHER BORATES

FROM RESEARCH TO INDUSTRY

C₂H₅ N
C₂H₅

SHARPLES

TRIETHYLAMINE

SPECIFICATIONS

Color Clear and Water White

Specific Gravity 0.73 @ 20/20°C.

Triethylamine Content 98.5% (Min.)

Distillation 85.0-91.0°C (100% between)

OTHER PROPERTIES

Molecular Weight (Calc'd) 101.2 20°F.

Flash Point (open cup)

Average Weight 6.07 lb.

Triethylamine is miscible in all proportions with water below 18°C. but its solubility rapidly decreases as the temperature is raised. It is soluble in most common organic solvents.

APPLICATIONS

- Solubilizing Agent for 2, 4-D and 2, 4, 5-T acids
- M Antilivering agent for enamels
- Intermediate for quaternary compounds
- W Catalyst
- 1 Solvent
- Selective extractant

For further information, write to Dept. A



SHARPLES CHEMICALS INC.

350 Fifth Avenue, New York

80 E. Jackson Blvd., Chicago

Martin, Hoyt & Milne, Inc., Los Angeles, San Francisco, Portland, Seattle Shawinigan Chemicals Ltd., Montreal, Quebec, Toronto, Ontario Export: Airco Company International, New York

menadione, u.s.p. xiv

oil soluble vitamin k useful in hemorrhagic diseases, diatheses due to low thrombin content.

digitoxin, u.s.p. xiv

in cardiac therapy.

monobromated camphor

useful in certain chronic neurologic conditions.

propyl gallate

an anti-oxidant for edible animal fats.

albumin tannate, medicinal

useful in control of intestinal disturbances.

dichloran

Lauryl dimethyl dichlorobenzyl ammonium chloride. Supplied in 10% and 50% concentrations as aqueous solution and 100% as a viscous water soluble material. The already high phenol coefficiency of quaternaries is increased in this product because of the chlorines on the aromatic component. We also manufacture other quaternary ammonium compounds.

write for our catalog

fine organics, inc.

211a EAST 19th STREET

NEW YORK 19, N. Y.



SPECIALTIES

since there is only a limited time each year when the grubs are the right size. There are two-month spring and six-week late fall seasons.

The powder is applied in spots three feet distant from each other. Grubs ingest the spores and spread them throughout the area. Full effectiveness is reached within 12 to 18 months, and a second application is never needed.

If a quick kill is desired, strictly chemical insecticides are essential. These, however, do not have the extreme selectivity of the powder, which doesn't effect adult beetles, other animals or plants.

Supply Problem: With the Japanese beetle infestation zone extending from Boston to Norfolk to Cleveland, there is a great potential demand for Milky Disease Spore Powder, and present production is inadequate to service this large area.

Fairfax Bio-Lab Sales now has more orders than it can handle—shortages are even hampering its work in the District of Columbia and nearby Virginia and Maryland areas. The company takes 90% of the present output, and any expansion of sales hinges on an increase in production.

The remaining 10% is available at retail at \$4-7 per pound, mainly in the Washington and New York areas. Dealers, however, report disappointing sales. Apparently this is the same "but what if the neighbors don't" bugaboo that only a community effort can overcome.

New Fungicide

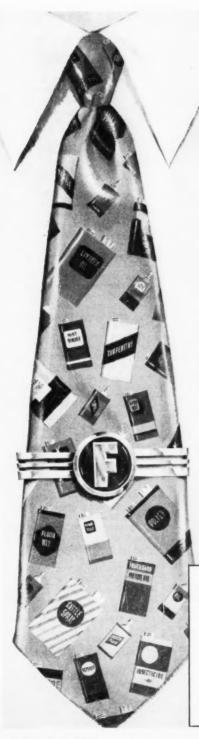
Now in the pilot stage, Dow is readying for production of a new fungicidal preservative, copper 3-phenylsalicilate. It is recommended for use with textiles and other materials, has been approved by the Army QM for use as an alternate material in U. S. Government specification JAN-D-504.

Reason for switch to copper 3-phenylsalicilate from G-4 and copper 8-quinolinolate: Those materials are in tight supply, are getting tighter. Tests were run on several materials, Dow's proved satisfactory.

Open Drums O.K.

A new regulation in California will enable suppliers to subpackage spray oil in open containers, thus eliminating delivery delay due to shortage of drums or other types of containers. The change in regulation came with the start of the citrus oil spray season this month.

The state department of agriculture, bureau of chemistry ruling pro-



A good way to dress up a product!

Products like liquid wax, varnish, insecticides, and so many others, look better and sell better in a Continental "F" Style can. Our master lithographers make every can a first-class salesman. Each Continental "F" Style can is as practical as it is good-looking, sturdy, easy-opening, easy-pouring. What's more, there is a Continental "F" Style can in just about every standard size – 4 oz. (spout top), ½ pint, pint, quart, ½-gallon and gallon.

P.S. Continental also makes steel containers in a wide variety of sizes for bulk shipments.



CONTINENTAL CAN COMPANY

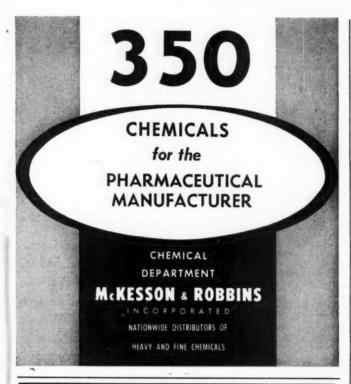
CONTINENTAL CAN BUILDING

100 East 42nd Street



New York 17, N. Y.

Eastern Division: 100 East 42nd St., New York 17 • Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4



IS VACUUM THAT'S 99.99% PERFECT good enough for your process?

THIS degree of vacuum is easily obtained with the Croll-Reynolds four or five-stage steam jet EVACTOR, with no moving parts. Each stage from a mechanical standpoint is as simple as the valve that turns it on. Numerous four-stage units are maintaining industrial vacuum down to 0.2 mm. and less, and many thousands of one, two and three-stage units are maintaining vacuum for intermediate industrial sequires.



Four-stage experimental Evactor

intermediate industrial requirements on practically all types of processing equipment. By permitting water, aqueous solutions or any volatile liquid to evaporate under high vacuum and without heat from an outside source, enough BTU's can be removed to chill the liquid down to 32°F, or even lower in the case of solutions. This is the principle of the Croll-Reynolds "Chill-Vactor." Hundreds of these have been installed throughout the United States and in several foreign countries.

An engineering staff of many years experience has specialized on this type of equipment and is at your service. Why not write today, outlining your vacuum problem?



CROLL-REYNOLDS CO., INC.

17 John Street, New York 38, N. Y.

CHILL-VACTORS STEAM JET EVACTORS

CONDENSING EQUIPMENT

SPECIALTIES .

vides that sales of foliage spray oils or dormant spray oils may be made out of registered suppliers' opened containers of not less than 100 gal., fully labelled and with the legend "For Subpackaging". Containers into which delivery is made must be fully labelled.

Previously, sale of economic poisons could be made only in suppliers' sealed containers.

Water Repellent: Du Pont has just brought out a water repellent, Aridex PER, which is designed for use in dry cleaning equipment employing synthetic solvents. Used with a storage tank and pump connected to the cleaning cylinder, the product may be applied to any garment that can be dry cleaned, without removing it from the cylinder.

Silicone Straightener: Silicones are edging into the cosmetic field: A new hair straightener containing seven silicone derivatives in its formula is being distributed to beauticians in the Chicago area.

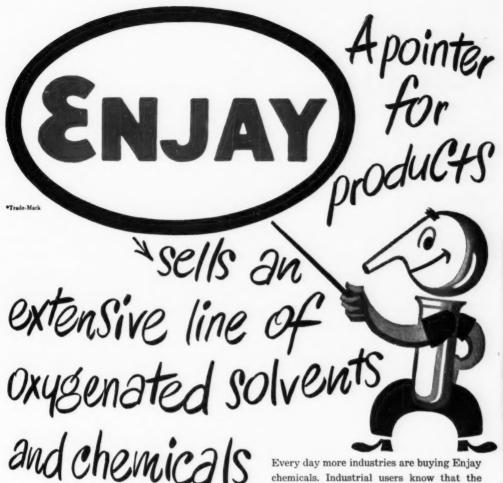
Northwestern Research Corp. (Chicago), the producer of Bes-Gay. as the new product is called, ran a series of burning tests on fifty different types of hair in a project begun two years ago, found that hair gives about 35% ash, of which 38% is silica. Next step was to find silicon compounds which would form a cohesive film, held to the hair filament by mutual attraction of silicon atoms in film and filament. These were the seven silicone derivatives, derived from three silicones, which are present in the new product in the amount of 41/2%. These derivatives solidify at slightly elevated temperatures, forming the film which gives the desired effect on kinky hair.

A treatment costs \$1-3, requires about ½ oz. from the 6 oz. bottle in which the product is packaged.

Bubbly Cologne: Latest luxury for Saturday nights is a combination cologne and synthetic detergent bubble bath said to be the first compatible mixture of these types of products.

It is Myth Bubble Bath (Trylon Products Corp., Chicago), an amber liquid packaged in a silk-screen labeled glass bottle. Price is \$1 for 6 oz.

Liquid Starch: Union Sales Corp. (Columbus, Ind.) is test marketing Pennant Reddi, its new liquid starch, in the Indianapolis area. The product merely requires the addition of warm or cold water to make laundry starch.



Every day more industries are buying Enjay chemicals. Industrial users know that the solvents and chemicals sold under the ENJAY* Oval Trade-mark are famous for high-quality and dependability.



ENJAY markets this wide range of industrial chemicals:

Petrohol 91 (Isopropyl Alcohol) Petrohol 95 (Isopropyl Alcohol) Petrohol 99 (Isopropyl Alcohol) Secondary Butyl Alcohol Isopctyl Alcohol Isopropyl Acetate

Secondary Butyl Acetate
Acetone

Ethyl Ether Isopropyl Ether Diisobutylene Polypropylenes Butadiene Isoprene Dicyclopentadiene

Methyl Ethyl Ketone

Aromatic Tars
Paratone
Parapoid
Paratac
Paranox
Paraflow
Vistanex

Naphthenic Acids

ENJAY products are marketed in bulk or in quantities to fit your requirements.

ENJAY COMPANY, INC. 15 W. 51st St., New York 19, N. Y.

Mono Oleates Di

of

- DIGLYCOL
- ETHYLENE GLYCOL
- DIETHYLENE GLYCOL
- POLYETHYLENE GLYCOL
- PROPYLENE GLYCOL
- POLYOXYETHYLENE
- BUTOXYETHYL
- GLYCERINE

MADE TO MEET YOUR SPECIFICATIONS



The C.P. Hall Co.
CHEMICAL MANUFACTURERS
5147 W. 67th Street, Chicago 38, Illinois
AKRON, OHIO . NEWARK, N. J.
COS ANGELES, CAL.
LOS ANGELES, CAL.

BOOKS

Industrial Piping, by Charles T. Littleton. McGraw-Hill Book Co., New York, N.Y.; vii+394 pp., \$8.

Practicing piping designers, erection foremen, engineers and draftsmen employed in the chemical and process industries require technical data on industrial piping-the various materials used, types of pipe and fittings, etc. The object of this book is to provide this essential information in one source. Practical problems are stressed. The author discusses the most recently developed piping materials, alloys and plastics in the light of their advantages and disadvantages. A special chapter by R. A. Dickson is concerned with estimating piping costs and variations in these costs,

Oil, Fat and Soap, by B. Levitt. The Chemical Publishing Co., New York, N.Y.; 238 pp., \$6.

Writing for those in the oil, fat and soap industries, the author discusses in a non-technical manner the various steps and materials going into the manufacture of soap. After reviewing the history of soap manufacture, he goes on to cover the topics of vegetable oils, animal and vegetable fats, soap, shampoo and detergent formulations, the saponification process, specialty soaps and processes, synthetic surface-active agents and other phases of the industry. A glossary of terms is included as well as multiple tables.

Paint Film Defects: Their Causes and Cure, by M. Hess. Reinhold Publishing Co., New York, N.Y.; 561 pp., \$12.

Based on a standard German work written more than a decade ago, this volume is the first English edition of the book-now revised and extended. Compiled as a reference work on paint defects and failures, the book is organized into four major parts which deal with the various types of failures, their causes and remedies. The four divisions are classified as faults which develop during storage, faults developed during application, failures shortly after application, and defects of coatings on the finished objects when in use. Additional sections deal with the raw material aspects of the paint and varnish industries.

Briefly Listed

RUBBER RED BOOK, 1951-1952 edition contains list of over 1,100 rubber manufacturers in the U.S., a classified list of rubber products, a geographical listing of rubber factories, plus an index of Cana-

dian rubber manufacturers. Published by Rubber Age, 250 West 57th St., New York, N.Y., \$7.50.

FUEL OIL MANUAL, by Paul F. Schmidt, 160-page manual furnishing information regarding properties, burning, selection and handling of fuel oil; data intended for men using or selling fuel oil for building heating, power generation, marine applications or industrial processes. Published by The Industrial Press, 148 Lafayette St., New York, N.Y., \$3.50.

INDUSTRIAL WATER POLLUTION, a 142-page survey of legislation and regulations on this subject providing facts on pollution laws and regulations listed in the alphabetical order of the states. The Federal Standard Legislation governing water pollution is also discussed as it often serves as a model for other legislation along this line. Chemonomics Inc., 400 Madison Ave., New York, N.Y., \$5.

MEETINGS ..

Food, Drug & Cosmetic Law Div., Amer. Bar Assn., annual meeting, New York Univ. Law Center, New York, N.Y., September 19-20.

Fundamental Research Conf., national convention, Appleton, Wis., September 19-21.

Drug, Chem. & Allied Trades Sect., New York Bd. of Trade, annual meeting, Shawnee-on-Delaware, Pa., September 20-22.

Engr. Manpower Comm. Convocation, Pittsburgh, Pa., September 28.

Amer. Oil Chems' Soc., fall meeting, Edgewater Beach Hotel, Chicago, Ill., October 8-10.

Natl. Safety Council, congress & exposition, Stevens Hotel, Chicago, Ill., October 8-12.

Electrochemical Soc., annual meeting, Hotel Statler, Detroit, October 9-12.

Amer. Tung. Oil Assn., Buena Vista Hotel, Biloxi, Miss., October 11-12.

Boston Conf. on Distribution, Statler Hotel, Boston, Mass., October 15-16.

Amer. Gas Assn., annual convention, Kiel Auditorium, St. Louis, October 15-17.

Amer. Assn. of Textile Chems. & Colorists, annual meeting, Statler Hotel, New York, N.Y., October 17-19.

Inst. of Gas Technol., annual meeting, Chicago, October 18.

Natl. Assn. of Corrosion Engrs., South Central Region, annual meeting, Corpus Christi, Texas, October 18-20.

Southwide Chem. Conf., Wilson Dam, Alabama, October 18-20.

Q.E.D.

Q.E.D.

igat into the out of Waldisch Organ mat on the ofth consideration of those entire administrate feet No storage problems no procurement published

Pully externate. No complicated control problems Concreted at point of use with equipment requiring

He full-time supervision or labor required.

Constant, predictable operating cost.

" Q.E.D."

Write for information.

THE WELSBACH CORPORATION

ZONE PROCESSES DIVISION

2409 W. Westmoreland Street, Philadelphia 29, Pa.

aloac for a stailer of a lambe start of related or

Pioneers in Continuing Ozone Research

Right Combinal to reduce your costs and improve the quality of your products...



SULFRAMIN*E LIQUID

Sulframin E is a modified alkyl aryl sulphonate in a liquid form that does not separate on standing . . . and that offers all of these outstanding advantages:

ECONOMICAL: Sulframin E Liquid is 10 to 15 percent lower in cost than conventional dry forms.

CONVENIENT: It's ready to use on delivery, saving time and labor.

EFFICIENT: Sulframin E has unusual resistance to hard water, lime soap, acid and alkali. Provides low end-point performance. Produces luxuriant foam in warm or cold water immediately. Rinses quickly and thoroughly even at low temperatures. Surpasses the field as a detergent in many operations. Shows a pH of 7.5 in any concentration of distilled water which is not changed by temperature variations.

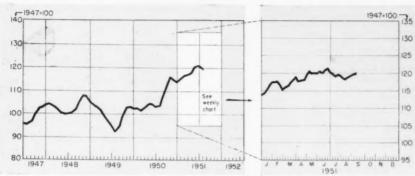
Let us assist you in determining whether or not Sulframin E is fitted for your requirements. And, if it is, let us help you determine the most satisfactory formula for your operation. Write or telephone today!

ULTRA Chemical WORKS * Trademark Registered U. S. Patent Office

ULTRA CHEMICAL WORKS, INC.
HAWTHORNE, CALIF. PATERSON, N. J. JOLIET, ILL

ONE OF THE BASIC MANUFACTURERS OF DETERGENTS IN AMERICA

CHEMICAL MARKETS.



CW Index of Chemical Output-Basis: Total Man-Hours Worked in Selected Chemical Industries

The National Production Authority still sticks by its guns in predicting adequate last quarter glycerine supplies, despite signs of a current pinch. NPA feels that some hard-to-foresee factors last May, when the survey was first made, have worked out to make the estimate still valid.

Total glycerine output is figured at 225 million pounds, imports at 15 million, for a combined supply of 240 million pounds. And if the military stays quiescent, demand is rated just a shade less at 237.5 million pounds for the year. (See p. ge 51.)

Lack of nickel for plant equipment prevents more synthetic glycerine from making its commercial appearance. Shell Chemical Company expects to bring in a 50% boost over the present capacity of its Houston, Texas plant (40 million pounds) by early next year. There is a possibility that Shell will go ahead with the use of some other reactor alloy in its operating plans, switch to nickel later.

Alkyd resin makers and cellophane producers won't be left unprotected even if glycerine supply falls short of buyers' wants. Atlas Powder Company will, before the end of the year, have doubled its sorbitol output to a lofty 75 million pounds annual level.

Busy NPA has just completed a second bird's-eye survey of chemicals to see how supplies have fared since two months ago, under the stress of mobilization. In the shifting panorama that is the chemical industry, some hitherto elusive chemicals are missing from the new hard-to-get list, while others now manage to be included. Chemicals in approximate balance today: formerly scarce items such as benzene, aniline, DDT, and ethanolamines. The reason: green lights for production, close-to-the-vest buying.

Still in very short supply by NPA standards are stalwarts like chlorine, pentaerythritol, phenol, and phthalic anhydride, along with a flock of smaller ones that harry the existence of prospective users.

Synthetic rubber keeps the pressure on many chemicals that would otherwise ease. More cold rubber will be needed in the expanded GR-S program. This means so much less methyl chloride for other refrigeration needs.

However, the Office of Rubber Reserve will bestow a supply dividend on molders of polystyrene. How: by reducing the amount of styrene in the formula, thus saving about 15 million pounds yearly.

MARKET LETTER

MARKET LETTER

WEEKLY BUSINESS INDICATORS	Latest Week	Preceding Week	Year Ago
Chemical Industries Output Index (1947—100)	120.7	120.3	111.3
Bituminous Coal Production (Daily Average, 1000 Tons)	1.756	1,791	1,843
Steel Ingot Production (Thousand Tons)	1.999	1,965	1,921
Wholesale Prices—Chemicals and Allied Products (1926—100)	140.1	140.0	125.2
Stock Price Index of 14 Chemical Companies (Standard & Poor's Corp.)	255.5	253.8	184.5
Chemical Process Industries Construction Awards (Eng. News-Record)	\$25,315,000	\$62,835,000	\$8,898,000
MONTHLY BUSINESS INDICATORS—EMPLOYMENT			
(Thousands)	Latest Month	Preceding Month	Year Ago
All Manufacturing	12.895	13.058	13.004
Non Durable Goods	5.649	5.646	5.554
Chemicals and Allied Products	526	528	479
Paper and Allied Products	419	427	396
Rubber Products	215	221	200
Petroleum and Coal Products	198	197	182

Furfural users who buy in the spot market can expect an extra pinch during the next few months. Reason: the fire in the butadiene plant operated by Phillips Chemical Co. at Borger, Texas. While butadiene loss wasn't heavy, considerable furfural, needed for the purification step, went up in smoke. And it is axiomatic that the synthetic rubber program doesn't lack for much for long.

Whopping, but not early, boost is looked for in U.S. production of ammonia or methanol. After long deliberation seeking to avoid antitrust overtones, the Army has leased the Morgantown, W. Va. plant to Mathieson Chemical Corp. When full scale operations resume within a year, some 200 thousand tons of ammonia or equivalent will be turned out annually.

The current and not-easily-remedied lead shortage presaged the Petroleum Administration for Defense's action this week in curtailing refiners' use of tetraethyl lead. Nonetheless, manufacturers are moving ahead with plans to make more ethyl chloride, raw material for TEL.

National Petrochemical, newly-formed subsidiary of National Distillers, is the latest to enter the field.

An even more serious shortage in the eyes of the National Production Authority is lack of copper for defense, which leads to a general squeeze in copper chemicals, notably the sulfate. A higher domestic ceiling price on copper is under advisement to catalyze an urgently needed influx on foreign supplies. Fortunately, seasonal fungicide demand for the sulfate has let up, but hard-pressed consumers are already on the lookout for next season's supplies.

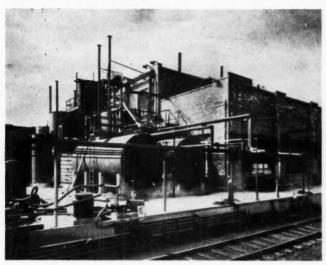
Stockpiling of such vegetable oils as castor, coconut, and palm will continue according to present plans of the Munitions Board. Despite attempts to home-grow castor beans, the U. S. still depends mainly on foreign supplies, easily cut off in event of hostilities.

But the board has no such plans for soybean oil for there's plenty on hand, and a record soybean crop is in the offing.

SELECTED CHEMICAL MARKET PRICE CHANGES-Week Ending September 10, 1951

DDT, carload Naphthalene, crude, imp.	\$.02 .01	New Price \$.46 .14	Sodium Benzoate, tech. Sodium Sulfite, anhy., c.l., cwt.	\$.04 .08	New Price \$.39 2.73
Cresylic Acid, imp., gal. Rosin, gum, WW, Savannah, cwt.	.15 .13	1.35 8.55	Turpentine, gum, Savannah, gal.	.03	.71

All prices per lb. unless quantity is stated.



BETA NAPHTHOL SHORTAGE: Raw material, not plant capacity, is the cause.

Tighter for Beta Naphthol

Beta naphthol supplies tighten as dyestuffs and rubber chemical companies scramble for this versatile intermediate.

Reason for scarcity: Raw material is naphthalene, in great demand for production of phthalic anhydride.

New phthalic raw materials give some promise for future easing of beta naphthol supply.

Beta naphthol, one of the more useful dye intermediates, has also become a worry of firms who need it for rubber antioxidants manufacture. While its production has shown a nominal increase in the past 10 years, the increase in demand has well exceeded production.

Naphthol producers say they would be able to turn out more, if it weren't for an inability to get their raw material, naphthalene, in short supply since the start of the Korean conflict. Naphthalene finds its greatest demand as a raw material for phthalic anhydride, a defense-essential chemical used in making alkyd resins, and to a lesser extent, plasticizers for vinyl resins.

Coal tar processors are being pushed by demands for naphthalene from producers of phthalic and beta naphthol. But while phthalic can also be made from petroleum ortho-xylene, beta naphthol can be produced only from naphthalene.

The squeeze is definitely on beta naphthol, and government emphasis on phthalic production doesn't help. Beta naphthol producers report a dogeat-dog scramble with phthalic producers for available naphthalene.

Naphthól Uses: On a tonnage scale, the biggest use for beta naphthól is in the production of rubber anti-oxidants. Phenyl beta-naphthylamine, a derivative, is added to GR-S synthetic. This of course is a demand which didn't exist too many years ago, and it's one which will grow bigger as production of the synthetic goes from 760 to 860 thousand tons next year.

Traditional use for beta naphthol is in dyestuff production. As an intermediate, it forms the basis for a large series of dyes and pigments. Other applications are found as a glue preservative sand in textile sizes. The resublimed grade is used in pharmaceutical ointments and in dandruff preparations.

Made and Paid: According to figures of the U.S. Tariff Commission, 1950 naphthol production was 31,-892,000 pounds, compared to 1941's 20,893,000. The figure for the current year probably will be close to 40 million.

At present there are four producers

of technical beta naphthol: Cyanamid's Calco Division, Sherwin-Williams, Sterling Drug's Hilton Davis Division and Allied's National Aniline. Sherwin-Williams and Chemo Puro resublime the technical material to make the U.S.P grade.

Calco, at one time, was the only major producer, and still accounts for the lion's share of the output. The competitive picture has changed since the war with such events as the opening of Hilton Davis's plant in 1949.

Outlook, Dim: The future for beta naphthol users is far from bright. Only real ray of hope, according to industry, is more emphasis on phthalic production from orthoxylene.

This would release the naphthalene which producers want for beta naphthol production.

No Glycerine Glut

Consumers of glycerine are taking heart this week at the hopeful tone of a recent survey by the National Production Authority. According to NPA, supplies and demand will be almost nip-and-tuck by the year's end. But would-be buyers are finding out that the balance is still on paper, and not in the trading arena.

Suppliers of both soap by-product glycerine and of the synthetic variety as well, report supplies are tight and could well worsen.

NPA Views: Glycerine supply for 1951 will be around 240 million pounds, according to the NPA tally. Demand is estimated at some 2 or 3 million pounds less. Of course, this equilibrium hinges upon the magnitude and urgency of military requirements. But several important marketers think that the NPA estimates, which were gathered earlier in the summer, may not be typical of today's market.

New Turn: Two significant factors bear on the still-difficult glycerine supply. Most important is the torpid state of the soap business at the present time. Soap production usually hits a summer low, but the present slump is compounded by the aftermath of scare buying that followed Korea. Since some 80% of glycerine comes from soap manufacture, the effect is easy to grasp.

The other influence is a decline in glycerine imports, especially from South America, below what would have been foreseen earlier this year. Much of the Argentine production is now en route to Spain, rather than the United States. Argentina apparently wants more glycerine for its own industrial economy, and has

CORROSION: Causes and Prevention

Third Edition-Just Published!

Third Edition—Just Published!

1. Simple, easy-to-understand explanation of the mechanism of corrosion and practical methods waste-kinds of corrosion, their nature and occurrence—how to prevent corrosion. In various engineering fields — economic methods of the corrosion of the



The Organization of INDUSTRIAL SCIENTIFIC RESEARCH

2. A thorough analysis of the methods actually used for the organization and operation of industrial research laboratories. Gives detailed information on the selection of the laboratory programthe direction of research—the financial administration of the laboratory and a number of auxiliary serv ices. By C. E. Kenneth Mees and John A. Leermakers, both of the Research Department, Eastm. Kodak Company. 383 pp., illus., \$5.00.

SMALL PLANT MANAGEMENT

3. How to organize, operate, and supervise the small plant. Points up advanced management techniques that can mean maximum production at minimum cost per unit. Gives tested methods on rating products, selecting processes, evaluating jobs, trolling expense, working with unions, and a host of other problems. Covers everything from financial planning and use of sales tools, to machine planning

and analyzing management funcof The American Society of Mechan-ical Engineers. Edited by Dr. E. Hempel, 499 pages, \$6.00

PROCESS HEAT TRANSFER

A Systematic instruction in the calculations, derivations, and emptries of heat transfer, using the language and methods of industry. Combines both a "know-heat transfer using the language and "know-heat transfer using the combines of the state of the

DAVE: PREF EWALLING

TO DATS PREE EXAMINATION
McGRAW-HILL BOOK CO., INC. 330 W. 42nd St., N.Y.C. 18
Send me book(s) checked below for 10 days' ex- amination on approval. In 10 days, I will pay for book(s) I keep, plus a few cents for delivery, and return unwanted book(s) postpaid.
Speller-Corresion-\$10.00
Mees & Leermakers-Industrial Scien. Research -\$5.00
ASME-Small Plant Management-\$6.00
Kern-Process Heat Transfer-\$8.00
(Print) Name
Address
City Zone State
Company
Position
This offee annies to U.S. only

CHEMICAL MARKETS. .

applied export licenses on glycerine to keep more of it at home. Since the first of the year, imports have dropped from 3.8 million pounds a month in January to less than half a million pounds in July, with little evidence of an upturn.

Tighter Then Better: The upshot of less production and fewer imports will have an early effect on the glycerine supply. If the military should come bursting in with calls "today at the latest," available supplies will bear the toll. New and secrecy-shrouded demands for glycerine have been growing in addition to the established military need for nitroglycerine manufacture.

Outside of this development, though, the longer range aspect points to a betterment in 1952. By that time, Shell Chemical Company should have completed its Houston plant expansion of some 50% above its current output of about 40 million pounds

Soap production is slated to pick up this fall after the abnormal stocks have been sold off, with a corresponding boost for glycerine too. More soap will be required if the lack of sulfuric acid brakes the rise of synthetic detergents. More soap buying is expected from government agencies during the next few months for the defense program. The 100 thousand ton jump in synthetic rubber production for 1952 will also create more demand for soap, and greater supply for glycerine.

Until Tide Turns: During the next few months, civilian glycerine users will be mostly leaning on producers' supplies. Stocks are still nearly 60 million pounds, about three months of normal output. But barring a military crisis, more call for soap and more synthetic glycerine will bring a happier 1952 future for the average

PICTURES IN THIS ISSUE

Cover (bottom)-Sid Carson, McGraw-Hill; p. 14-Intl. News Photo; p. 19 (left) -NBC, (right)—Hay Photo Service; p. 31
-Du Pont; p. 32—Gen. Petroleum Corp.;
p. 40—Porter Studios & Photo Supplies; p. 51-Baldwin & Mermey.

GOVERNMENT NEEDS

Bid Closing Invitation No. Quantity Item

N.Y. Quartermaster Procurement Agency, 111 E. 16 St., N.Y.: Soan Powder (Mechanics Hand 52-170-B 1,044,600 lbs scouring)

Aviation Supply Office, USN, 700 Robbins Av., Philadelphia:

Sept. 17	B-54140-B	84,000 gals	Water Emulsion floor wax
Sept. 19	B-54131-B	1,440 gals	Electrical Insulating varnish
Sept. 19	B-54131-B	894 gals	Exterior Drum Coating Enamel
Sept. 24	B-54147-B	10,600 quarts	Brushing Lacquer
C 4 24	TR E 41 49 Tr	t F 300 mule	Comming Lacoure

Sept. 24	Services Administration.	Roston	Taran.	Spraying	Lacquer	
Sept. 24	B-54147-B	10,600		Brushing		
Sept. 19	B-54131-B	894	gals	Exterior	Drum Coating	Enamel

Fire retardant paint Synthetic rubber base paint BO-W-1-29-52 BO-W-1-29-52 Oakland QM Procurement Agency, Oakland, Calif.:

1,350 gals Liquid Petrolatum UPS (in 5 gal. drums)

General Services Admin., Seattle, Washington:

Sept.	17	C-3925-1	875 gals	Exterior Oil paint, ready mixed,
Sept.		C-3925-1 C-3925-1	2,875 gals 750 lbs	Interior Oil paint, flat, ready mixed Paste-in-oil pigment, white lead, basic carbonate, type B

GOVERNMENT AWARDS

Supplier Location Item

Dallas Chem. Procurement District, 1111 Commerce St., Dallas 2, Texas: Magnesium Powder Chloracetophenone Metals Disintegrating Co. Federal Labs., Inc. Elizabeth, N.J. Pittsburgh 30, Pa.

Navy Aviation Supply Office, Philadelphia 11, Pa.: Columbus, Ohio New York 38, N.Y. Philadelphia 5, Pa. Peabedy, Mass. Pittsburgh, Pa. Elizabeth, N.J. American Zinc Sales Co.
N.J. Zinc Sales Co.
Rohm & Haas Co.
American Resinous Chems. Co. Zinc Oxide Pigment Zinc Oxide Pigment Phenol Resin

American Resinous Chems II, H. Robertson Co. Metals Disintegrating Co. Resin (Aran) Dry Copper Pigment Dry Copper Pigment

Chicago Chem, Procurement District, Chicago 6, Ill.: Metal & Thermite Corp. Westvaco Chem. Div., Food Mach. New York 17, N.Y. New York 17, N.Y. Incendiary Thermite Barium Nitrate, Class E & Chem. Corp.
National Padiator Co. (Plastic
Metals Div.) Johnstown, Pa. Silicon, Grade 11, Class C.

New York Chem. Procurement District, 111 E. 16th St., N.Y.: New York 38, N.Y. Cincinnati 1, Ohio New York 17, N.Y. Columbus 16, Ohio N.J. Zine Sales Co. Eagle-Picher Sales Co. St. Joseph Lead Co. American Zine Sales Co. Hockwald Chemical Co. Zine Oxide San Francisco, Calif. Warfarin Rodenticide



blyoxyethylene Ester

WILL DO THE TRICK?

USE

Opacifier

Defoamer

Emulsifier

Emulsifier

Plasticizer

Lubricant

HERE IS WHAT THEY HAVE DONE FOR OTHERS

POLYHYDRIC ALCOHOL FATTY ACID ESTERS INDUSTRY

Their differences in molecular weights produce marked differences in emulsifying, suspending, thickening, wetting, penetrating, spreading and other properties. Ethylene Glycol Mono Stearate Cosmetics Diglycol Laurate Paper Textiles Diglycol Stearate Cosmetics Paper Metals **Plastics** Poly Glycol 200 Mono Laurate

Viscosity Stabilizer Poly Glycol 400 Mono Laurate Insecticides Emulsifier General Non-ionic wetting agent **Plastics** Anti-static agent

Poly Glycol 400 Distearate Shampoos Thickener and foam stabilizer Poly Glycol 600 Mono Laurate **Detergents** Non-ionic surfactant

Carbowax 1000 Mono Stearate Anti-gelling agent Paper Coating Carbowax 1500 Mono Stearate **Pharmaceuticals** Dispersing agent Carbowax 4000 Mono Stearate

Electrical Insulation Water soluble lubricant Textiles Thickener

GLYCO PRODUCTS CO., Inc.

Perhaps they can help YC

PRODUCT

The polyhydric alcohol fatty acid esters which Glyco makes for industry are non-ionic surface-active agents of wide use. A very wide range of physical properties can be obtained by varying the starting materials. Glyco makes the products in several groupings—among them glycol esters and polyoxy-ethylene esters. More specific information on the products of this classification, as well as on other materials manufactured by Glyco, is yours for the asking. Why not send for our latest catelog today? Please address your request to Glyco Products Co., Inc., 26C Court St., Brooklyn 2, N. Y.







MARKET PLACE

LOCAL STOCKS . CHEMICALS . RAW MATERIALS EQUIPMENT . SUPPLIES



The Taber Abraser a new scientific instrument that accurately measures scratch and abrasion resistance of metals, plastics and paints. Also leather and fabrics. Instrument simulates actual wear ing conditions during test and gives merical index. Portable Model \$475 Standard Model \$650.



GBI

PRODUCTA

RESEARCH

=

FREE Catalog No. 677

Lists more than 300 tems for Research: BIOLOGICAL — MI-CROBIOLOGICAL — BIOCHEMICAL — BACTERIOLOGICAL NUTRITIONAL

Save Time Use this catalog as a ready reference for biochemicals, media, and test diets. Write for it.

GBI 69 LABORATORY PARK

SEARCHLIGHT SECTION

FNGINFFR-INDUSTRIAL

Chief Industrial Engineer needed for opening in large company in Philadel-phia area. Prefer man with B.S. and M.S. in Industrial Engineering. At least 10 or more years of experience in time study, wage incentives, plant layout, material handling studies, etc., in a supervisory and administrative position. All replies will be confidential. Please send complete resume including education, experience, age and salary desired to . . .

W-81, P. O. Box 3414 Philadelphia 22, Pa.

Industrial Translation Service

Technical and scientific translations from 15 major European lunguages. Patents. Efficient, prompt, confidential. Skilled personnel.

P.O. Box 2184, Charleston, W. Va.

CARBOYS - STEEL DRUMS

BOUGHT - SOLD

GENERAL CONTAINER CO. 441 RAYMOND BLVD. NEWARK S. N. MITCHELL 2-5632

GEAR UP FOR BIGGER PRODUCTION DELAY WITHOUT

GOOD USED EQUIPMENT

Ready for ediate Shipment t in possible to t in this space 5000 Machines silable from your FIRST SOURCE Send for our

FIRST MACHINERY CORP.

157 HUDSON ST. Worth 4-5900 NEW YORK 13.N.Y

LIQUIDATING

DISTILLERY

Distillation and processing equipment: Grain equipment and storage bins; screw conveyor and bucket elevators; copper tubular condensers; double pipe beer cooler; bronze pumps; copper tanks, steel tanks, etc.

PERRY EQUIPMENT CORP. 1415 N. 6th ST., PHILA. 22, PA.

AVAILABLE . .

- CUSTOM REFINING FACILITIES

 Distillation

 Extraction
- Separations
 Fractionations
 Drum Lots—Tank Cars

WANTED . . .

- All Types of Crude Mixtures By-Products
- Residues
- Wastes Contaminated Solvents

TRULAND Chemical &

Engineering Co. Inc.

Box 426, Union, N.J. UNionville 2-7360

MANUFACTURERS

Financially responsible party wants exclusive distrib-utership in Lee Angeles for your chemical products used in industrial plants or may consider only rep-resentation if product is favorable. Complete details.

RA 1863 Chemical Week

RECLAIMED & SURPLUS

CHEMICALS

BUY-SELL TITANIUM DIOXIDE ZINC OXIDE LITHOPONE PHTHALIC ANHYDRIDE PHENOL UREA

De Bear 636 ELEVENTH AVE.
NEW YORK 19, N. Y.

BOUGHT - SOLD

Glycols — Cellosolves — Ethanolamines Titoniums — Lithopone — Zinc Oxide Bichromates — Dyes — Colors, etc. Soda Ash — Caustic Soda

CHEMICAL SERVICE CORPORATION 96-02 Beaver St., New York 5, NY

Trietnanolar

WILLIAM D. NEUBERG CO., INC. 420 Lexington Ave., New York 17, N. Y. ORegon 9-2550

ETHYLENE GLYCOL

PROPYLENE GLYCOL METHANOL

TOBEY CHEMICAL CO. 1472 BROADWAY, N. Y. C. Tel. Lo 4-2520

PROFESSIONAL SERVICES =

=EVANS=

RESEARCH AND DEVELOPMENT CORP. Chemical Research Processes Products
Development Problems

Complete Laboratory Pilot Plant Mechanical
and Optical Sections

Ask for NEW Scone St 250 East 43rd Street, New York 17, N. Y.



CHEMICAL CONSULTATION, RESEARCH and DEVELOPMENT

Sometional Industrial Research Processes Development Chlori
Processes Chemotherspectics to the Organic Syntheses Microan THE PANRAY CORP.

Research Division 340 Canal St., N. Y. 13



READER SERVICE

HOW TO USE COUPON

Circle page numbers of items about which you want more details. Then write your name and address on the coupon at the bottom of the page and mail it to us. Your request will be forwarded to companies concerned, the answer coming direct to you.

MAKES IT HANDY

Products and literature in this issue are listed on these pages. There are three indexes. (1) Editorial items on new products, new equipment, new literature; (2) products advertised. (3) The index of advertisers is on the following page.

THE NUMBERS

Advertisements:-There is a page number on the coupon for each advertisement. Before the number, may appear, L, R, T, B (left, right, top, bottom), locating the ad on the page; small letters following (a,b,c) indicate additional products in the advertisement.

Editorial Items: - Numerals are page numbers; the ABC's distinguish among items where more than one is on a page. There is a number on the coupon for each item referring to new products, equipment, and literature.

EDITORIAL ITEMS

For more data, circle number on coupon

NEW PRODUCTS

Diosgenin Acetate

Pipe Ioint

Synthetic Rubber Latex

27B

CITY & STATE

NEW EQUIPMENT	
Dynel Filter Fabrics	33D
Graph Paper	33C
Incandescent Lamp	_ 33A
Industrial Flooring	338

TECHNICAL LITERATURE

CHEMICALS Cleaning Compounds Dry Powder Extinguishing Agent Hydrogen Peroxide	
EQUIPMENT	
Centrifugal Blowers and Compressors	56D
Mixer	56E
Pressure Transmitters	56F
Reduction Plant	56H
Stainless Steel	56G

PRODUCTS ADVERTISED

For more data, circle number on coupon Acetonitrile Albumin tannate, medicinal T42e Animal oils Boric acid Butyl stearates Capryl alcohol Catalyst research and development Cellolyn 106 Cellulose gum Detergents Sulframin E. liquid Ultrawet K Dichloran Digitoxin, U.S.P.

...12 30 98,994 28-29b T42b Di-oleates 46b Electronic tube 91 Fatty acids T27c, 35 Furaril Herbicides B40b Magnesium carbonate Magnesium oxide
Menadione, U.S.P.
Methyl dichloroacetate
Monobromated camphor T38a T42a 6 T42c Mono-oleates 46a Nitrie acid 58 Oxygenated solvents and 45 chemicals Ozones Pharmaceutical purpose Phosphorus and phosphorus T44 compounds B38a Plasticizers, PX Polybutenes, Indopol Polyoxyethylene esters 53 Potassium tripolyphosphate 26 Propyl gallate T42.1 Rosin amines 28-29c Sodium and potassium compounds Solvents, 601 B38b Solvents, chlorinated Sorbitol 39 Surfactants in insecticides and herbicides, booklet AP 17

Triethylamine	41
Vegetable oils	T27b
Vinsol resin Vinyl resins, scientific	28-29a
Vinvl resins, scientific	
service	9
White mineral oils.	
vitamin-E-fortified	T40
Chemical services, technical	1.1.190
and sales service, research	
and stock points	
Containers, cans, style F	40
Evotore states, style F	43
Evators, steam jet	В44
Filter aids, purified	
cellulose	3
Heat exchangers, liquid or	
gas cooling	
Lacquer	28-29e
Mineral fillers, mica	56
Plant sites available in	
Oklahoma	9
Ozonators	47h
Plant sites served by	
railway, booklet	18
Research laboratories	B27
Trucks, dump	17
The state of the s	

SEARCHLIGHT SECTION

(Classified Advertising)	
PROFESSIONAL SERVICES	54
EMPLOYMENT Positions Wanted Selling Opportunities Wanted	54
SPECIAL SERVICES	54
BUSINESS OPPORTUNITIES Offered	54
EQUIPMENT (Used or Surplus New) For Sale	54
WANTED Equipment Miscellaneous	54
ADVERTISERS INDEX Chemical Service Corporation Consolidated Products Company, Inc. De Bear, Incorporated First Machinery Corp. General Container Co. Neuberg Co., Inc., William D. Perry Equipment Corp. Tobey Chemical Co. Truland Chemical & Engineering Co.,	54 54 54 54 54

READER SERVICE COUPON

Mail to Chemical Week, 330 W. 42nd St., N. Y. 18, N. Y.

NAME POSITION COMPANY ADDRESS_

Editorial Items

				200010		CALLED				
27A 27B 32A	33A 33B		33C 33D	9,00	6A 6B	56C 56D		56E 56F	56 56	G
				Adve	ertisen	ents				
	6 9 10 11 12 17	18 21 22 26 T27a T27b	T27c B27 28-29a 28-29b 28-29c	28-29d 28-29e 30 33 34	35 36 T38a T38b B38a	B38b 39 T40 B40a B40b	41 T42a T42b T42c T42d	T42e T42f 43 T44 B44	45 46a 46b 47a 47b	48 53 56 57 58
Expi	res Dece	mber 15, 1	951							

BOOKLETS

Chemicals

Cleaning Compounds

Illustrated booklet entitled, "Permag Cleaning Compounds for Paper Mills, outlines cleaning processes and materials used in specific operations in paper mills; booklet is designed as a cleaning guide for purchasing and operating personnel. Magnuson Products Corp.

Hydrogen Peroxide

Bulletin, "Hydrogen Peroxide in the Manufacture of Viscose," explains the technique of making viscose rayon and discusses the action of hydrogen peroxide in aging alkali cellulose and ripening viscose. Buffalo-Electro-Chemical Co.

Dry Powder Extinguishing Agent

Technical bulletin describing "Met-L-X" dry powder as an extinguishing agent for magnesium fires often occurring in air terminal hangers and flight lines. Ansul Chemical Co.

Equipment

Centrifugal Blowers and Compressors

52-p. bulletin furnishing information on three types of the firm's centrifugal blowers and compressors-multistage, single stage end suction and single stage double suction. Four major sections deal with design and construction of equipment, application data, steam turbine and motor drives and engineering data which includes curves, formulas and computa-tions. De Laval Steam Turbine Co.

Mixer

12-p. bulletin devoted to "Dispersall" mixer for dispersing, emulsifying and milling in one operation-applicable to all kinds of fluid mixes from thin slurries to pastes; included here is information on applications of mixers, specifications, fields using them plus performance data. Abbé Engineering Co.

Pressure Transmitters

Engineering data sheets giving application data, operational features, available ranges, wiring and case diagrams of pres-

sure measurement transmitters, all of which feature differential transformertype transducers and are designed for use with standard recorders and indicating instruments having dead-beat response servo receivers. Automatic Temperature Control Co., Inc.

Stainless Steel

120-p. handbook covering 40 different types of the firm's stainless steel with reference to analyses, fabrication, heat treatment and special conditions of service; the first chapter gives selection information for given applications in a selector table which lists properties of about 30 types of stainless according to physical data, electrical properties, heat resistance, etc: Allegheny Ludlum Steel Corp.

Reduction Plant

16-p. booklet entitled, "Welcome to Jones Mills," explains how reduction plant produces aluminum pig by the electrolytic reduction process, illustrates facilities and equipment in addition to furnishing technical data on the plant and briefly reviewing other of company's production facilities. Reynolds Metals Co.

BUSINESS STAFF

SALES MANAGER Bayard E. Sawyer BUSINESS MANAGER Albert E. Weis Atlanta 3 Ralph C. Maulstby, 1311 Rhodes-Haverty Bldg., Atlanta

Chicago 11 Alfred D. Becker, Jr., Steven J. Shaw, 520 N. Michigan Ave. Cleveland 15 Vaughan K. Dissette, 1510 Hanna Bldg.

Dollos 1 James Cash, First National Bank Bldg. Los Angeles 17 Jos. H. Allen, H. L. Keeler, 1111 Wilshire Blvd.

New York 18 . . . Knox Armstrong, Robert S. Muller, Charles L. Todaro, 330 West

hiladelphia 3 William B. Hannum, Jr., Architects Bldg., 17th & Sansom Sts. Philadelphia 3 Son Francisco 4 Ralph E. Dorland, John W. Otterson, 68 Post St.

Boston 16 1427 Statler Bldg. Detroit 26 S56 Penobscot Bldg. Pittsburgh 22 738 Oliver Bldg. St. Louis 8 3615 Olive St., Continental Bldg.

WATERGROUND and MICRO

Mica-a flaky mineral filler for use in Plastics, Paints, Special Cements, Rubber and Asphalt Compounds where its particular properties such as thermal and electrical insulation, transparency, toughness, flexibility and chemical inertness are of value

THE ENGLISH MICA CO. STERLING BUILDING, STAMFORD, CONN.

ADVERTISER'S INDEX	
AMERICAN BRITISH CHEMICAL SUPPLIES,	6
Agency—Richard Lewis, Advertising AATARA PRODUCTS, DIVISION OF GENERAL DYESTUFF CORP. Agency—J. Hayden Twiss, Advertising	11
Agency-J. Hayden Twiss, Advertising	36
Agency-N. W. Ayer & Son, Inc.	39
Agency-The Aitkin-Kynett Co.	21
BROWN CO	3
Agency—J. M. Mathes, Inc. CARBIDE & CARBON CHEMICALS CO., A DIVISION OF UNION CARBIDE & CARBON CORP.	22
CORP. Agency—J. M. Mathes, Inc. CELANESE CORP. OF AMERICA Agency—Ellington & Co., Inc.	10
	12
Agency—Fuller & Smith & Ross, Inc. CONTINENTAL CAN CO.	43
born, Inc.)8-
AconeyI Hayden Twise Advertising	144
DAVISON CHEMICAL CORP., THE 3rd Co Agency—St. Georges & Keyes, Inc. DEMPSTER BROTHERS, INC. Agency—Charles S. Kane Co. ENGLISH MICA CO., THE	17
Agency—Charles S. Kane Co.	56
Agency—Terrill Beiknap Marsh Associa	tes 45
Agency-McCann-Erickson, Inc.	T42
Agency—Sid N. Cottin, Advertising GENERAL BIOCHEMICALS, INC.	54
CHEMICAL & DYE CORP. Back Co	194
Agency—Atherton & Currier, Inc. GENERAL MAGNESITE & MAGNESIA CO. Agency—S. M. Ferrer, Advertising GIYCO PRODUCTS CO., INC. Agency—J. Hayden Twiss, Advertising GRAND RIVER DAM AUTHORITY Agency—Watts, Payne Advertising	F38
GLYCO PRODUCTS CO., INC	53
GRAND RIVER DAM AUTHORITY Agency—Watts, Payne Advertising HALL CO., THE C. P.	2
Agency-Cruttenden & Foor Advortisis	70
HARDESTY CO., W. C.	35
Agency—J. Hayden Twiss, Advertising HERCULES POWDER CO. 28 Agency—Fuller & Smith & Ross, Inc. INDOIL CHEMICAL CO. Agency—McCann-Erickson, Inc. May Epiles Chemical Services.	-29
Agency—McCann-Erickson, Inc. KAY-FRIES CHEMICALS, INC.	6
Agency—Richard Lewis, Advertising McGRAW-HILL BOOK CO., INC.	52
Agency—McCann-Erickson, Inc. KAY-FRIES CHEMICALS, INC. Agency—Richard Lewis, Advertising McGRAW-HILL BOOK CO, INC. MCKESSON & ROBBINS, INC. Agency—Bisherne Advertising Co. NAUGATUCK CHEMICAL DIVISION, UNITED STATES RUBBER CO.	T44
STATES RUBBER CO. Agency—Fletcher D. Richards, Inc. NIAGARA BLOWER CO. Agency—The Moss Chase Co.	9
NIAGARA BLOWER CO. Agency—The Moss Chase Co.	34
NORFOLK & WESTERN RAILWAY	18
Agency—Houck & Co., Inc. OLDBURY ELECTRO-CHEMICAL CO. Agency—Briggs & Varley, Inc. PACIFIC COAST BORAX CO. PITTSBURGH COKE & CHEMICAL CO. Agency—Walker & Downing, Advertic QUAKER OATS CO., THE Agency—Rogers & Smith, Advertising ROHM & HAAS CO.	B38
PITTSBURGH COKE & CHEMICAL CO.	33
QUAKER OATS CO., THE Agency—Rogers & Smith, Advertising	1
ROHM 6 HAAS CO. Agency—John Falkner Arndt & Co., SHAPPLES CHEMICAL, INC. Agency—Sommers-Davis, Inc.	Inc
SHARPLES CHEMICAL, INC. Agency—Sommers-Davis, Inc.	4
SNELL, INC., FOSTER D. SOLVAY SALES DIVISION, ALLIED CHEMI- CAL & DYE CORP. 2nd C	B2
Agency-Atherton & Currier, Inc.	
TABER INSTRUMENT CORP. ULTRA CHEMICAL WORKS, INC.	5
L. SONNEBORN SONS, INC. Agency—Hicks & Greist, Inc. TABER INSTRUMENT CORP. ULTRA CHEMICAL WORKS, INC. Agency—S. R. Leon Co., Inc. UNION CARBIDE & CARBON CORP. CARBIDE & CARBON CHEMICALS CO. Agency—J. M. Mathes, Inc. UNITED STATES POTASH CO. INC.	
Agency—J. M. Mathes, Inc. UNITED STATES POTASH CO., INC.	2. B4.
Agency-McCann-Erickson, Inc. WELCH, HOLME & CLARK CO., INC	
Agency—Byrde, Richard & Pound WELSBACH CORP. Agency—The Philip E. Jones Co. WESTVACO CHEMICAL DIVISION FOOD MA.	4
WESTVACO CHEMICAL DIVISION FOOD MA- CHINERY & CHEMICAL CORP. Agency—James J. McMahon	
Agency—James J. McMahon WYANDOTTE CHEMICALS CORP	
Agency— N. W. Ayer & Son, Inc.	



Or the Obnoxious Catalyst and How It Was Made

A chemical manufacturer who was producing the catalyst for their produce ... valuable space HYDROGENATION catalyst presented many difficulties to a own use. It was hazardous and costly to produce . . . valuable space and equipment needed for regular plant production was being monopolized.

Having heard of the confidential and dependable manner in which Davison produced specialty catalysts this company turned to Davison produced specialty catalysts this company turned to Davison's Field Service Engineers for help. Davison Research then took over and soon the catalyst was being turned out by a pilot plant operation. Then an initial plant run was made.

Not only did Davison's experience and modern facilities produce the catalyst at a reduced cost but the efficiency of the catalyst was also increased. The production of this hydrogenation catalyst by Davison know-how eliminated the dangerous plant problem and enabled the chemical manufacturer to utilize valuable space formerly used to manufacture the catalyst.

If you have a catalyst problem, why don't you contact the It you have a catalyst problem, why don't you contact the Davison Field Service Engineer or the Technical Service Department and put Davison Research to work for you.

THE DAVISON CH



PRODUCERS OF: CATALYSTS, INORGANIC ACIDS, SUPERPHOSPHATES, PHOSPHATE ROCK,



ncient as Alchemy ... Modern as Guided Missiles!

Known for fourteen centuries-yet required for propelling the most advanced aircraft and guided missiles! That's the story of Nitric Acid, the ageless chemical.

Alone, or as a component of mixed acid, Nitric has long had a host of important industrial uses. In today's broad defense program, its role is more vital than ever.

As a primary producer for over 50 years, General Chemical is known for the uniformity and high quality of its Nitric Acid-in any desired

strength and grade-for any need. Thorough knowledge of the product and its properties recently led to General's development of the first Anhydrous Nitric Acid, as well as special fuming forms for urgent military and industrial programs.

For your Nitric needs, consult General Chemical first. Further information on any of the grades and strengths

listed here may be obtained from the nearest General Chemical office. Grades of General Chemical Nitric Acid include:

Standard 36°, 38°, 40° and 42° Baume

Diamond* 36°, 38°, 40° and 42° Baume

Photo Engravers 36°, 38°, 40° and 42° Baume

Nitric Acid 95% (48.5° Be), Diamond and Standard

> Reagent, A.C.S. Sp. Gr. 1.42

White Fuming Reagent, A.C.S. and Technical, Sp. Gr. 1.49-1.50

Red Fuming Reagent, and Technical, Sp. Gr. 1.59-1.60

Anhydrous Total acidity 99.8% min.

GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION 40 Rector Street, New York 6, N. Y.

Offices: Albany • Atlanta • Baltimore • Birmingham • Boston • Bridgeport Buffalo • Charlotte • Chicago • Cleveland • Denver • Detroit • Greenville (Miss.) • Houston • Jacksonville • Kalamazoo • Los Angeles • Minneapolis • New Schibiadelphia • Pirtsburgh • Providence • St. Louis • San Francisco • Seattle Yalma (Wash.)

In Wisconsin: General Yakima (Wash.)

In Canada: The Nichols Chemical Company, Inc., Milwaukee, Wis.



* Highest Commercial Quality